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Given under my hand and seal on June 12, 1943

Henry Morgenthau Jr.
SECRETARY OF THE TREASURY

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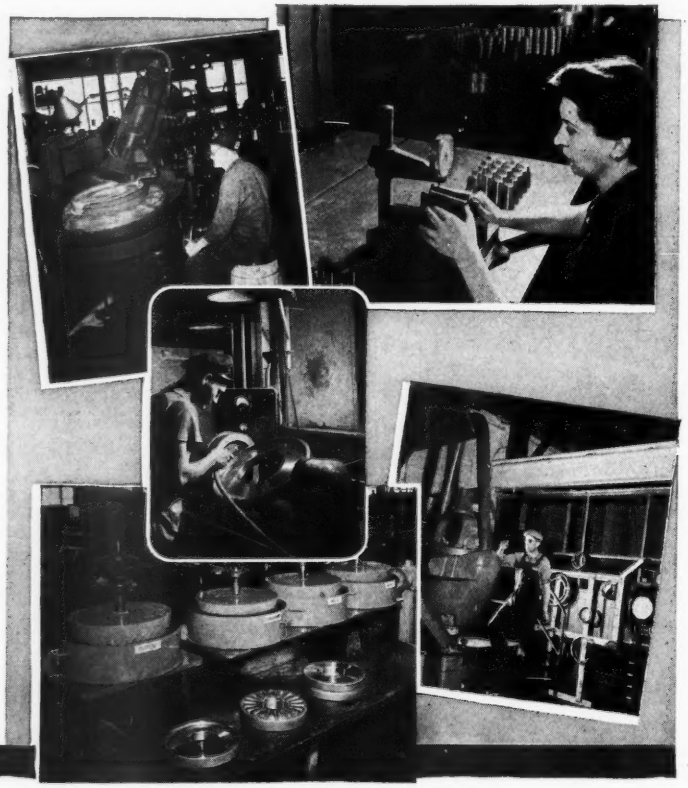

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Administrative Highlights •

Amendment No. 1 to P-98b

Preference Rating Order P-98-b, under which the petroleum industry secures priorities assistance in obtaining materials, was amended on Aug. 9 in two important respects.

By terms of the amended Order:

1. Production operators are authorized to use a Preference Rating of AA-2X in obtaining materials (other than maintenance, repair and operating materials) for production operations.

2. It is no longer necessary for any petroleum operator, regardless of which branch of the industry is concerned, to place both a preference rating and an allotment number on delivery orders.

Experience has shown that delivery orders for many manufactured products needed in production operations must be filed much earlier, —months earlier in some instances —than the time provided for filing applications for allotments of controlled materials. Such items (other than MRO materials) have therefore required special applications on Form WPB 2565 for a preference rating assignment, in advance of the regular application for controlled materials allotment.

Since the preference rating structure under the Controlled Materials Plan has been fairly well stabilized, it is now possible to eliminate the special application for a preference rating and authorize the regular use of the AA-2X rating for such delivery orders.

By providing an automatic rating of AA-2X in P-98-b, the need for filing WPB-2565 applications is eliminated in the following instances:

1. Production operators who do not require controlled materials need not file such applications.

2. Production operators who require capital equipment in advance of the time an application is filed for an allotment of controlled materials, need not file a special application in advance of such time, since the automatic preference rating is available to them to secure such capital items.

3. Production operators who are able to project their operations into a calendar quarter beyond the one for which they have filed an application for controlled materials, need no longer file an application to secure a preference rating for capital items for use in such future calendar quarters.

Under the original terms of the War Production Board's CMP Regulation No. 3, delivery orders carrying both a preference rating and an allotment number for controlled materials, had a higher preference than delivery orders carrying only a preference rating. With the recent revision of CMP Regulation No. 3, this is no longer true. Therefore, petroleum operators need no longer put both the preference rating and the allotment number on their delivery orders, but may now use only the one which is appropriate.

These two changes in procedure will result in the elimination of considerable paper work on the part of both the petroleum operators and the Petroleum Administration for War. If further opportunities to eliminate or minimize paper work appear, procedures will be revised to take advantage of such opportunities.

PETROLEUM INDUSTRY WAR COUNCIL

Committee on
Cost and Price Adjustment
J. D. Gill, Chairman
260 South Broad Street
Philadelphia, Penna.

August 12, 1943.

To Members of the Committee on Cost & Price Adjustment:

Re: Proposed General Crude Oil and Products Price Increase.

Effect on the Cost of Living Index.

Gentlemen:

The following brief summary of a study of the above subject made by your Committee staff may be useful in your further consideration of the matter.

The Petroleum Administrator's recommendation for a price increase of 35c has been repudiated by OPA, and a major reason for the repudiation was OPA's unwillingness to make any price changes which would raise the cost of living. What follows establishes the lack of foundation for the fears of OPA insofar as the recommended crude and products price increase is concerned. Statistically the effect of the proposed increase is hardly measurable.

Just before he took office as Price Administrator last January, Prentiss Brown stated definitely that the United States could expect a slow, orderly, but "inevitable" increase in the cost of living, probably at the rate of ½ of 1 per cent a month. Since he made that statement, Mr. Brown's views, or at least his official views, have changed and he now professes allegiance to the current Administration obsession of "hold-the-line." OPA's objection to a crude price increase is based almost entirely on the alleged inflationary

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effect which such an increase would have, and it is claimed that higher oil prices would raise the cost of living, leading to a demand for higher wages, etc.—in other words, that it would constitute a serious breach in the so-called line against inflation.

A realistic examination of the present economic situation results in two conclusions about this OPA policy: first, that Mr. Brown was right the first time when he said that a continuous rise in the cost of living was inevitable; and second, that the effect of an increase in petroleum prices on the cost of living would be so minute that it could not by any stretch of the imagination be said to threaten the whole anti-inflationary effort.

The cost of living index has shown an increase every month except one since the war started in Europe in 1939, and the total rise since that time has been 26.6 per cent:

1939: August 15	98.6
1941: December 15	110.5
1942: June 15	116.4
1943: June 15	124.8

The rate of increase has slowed somewhat in the last year, and in the last month the index actually dropped by 0.2 per cent, but the decline was entirely in the food component and was due partly to seasonal factors and partly to artificial control measures, neither of which can be expected to have permanent effects. Even in the last six months, when the "hold-the-line" policy has been bally hooed to the skies, the index has risen by 3½ percent, which is slightly more than the ½ of 1 percent a month predicted by Mr. Brown. So long as the war lasts at least, large amounts of money in the hands of consumers will continue to force the cost of living up, and if—as would happen in the case of petroleum—the rise reflects an increase in the quantity of goods available, no harm is done to the economy as a whole, but rather the standard of living shows a net gain.

The function of governmental controls, again as Mr. Brown indicated when he was still on the outside and before his objective judgment was exposed to Administrative theorists, should be to keep the inevitable increase as slow and orderly as possible so as to avoid unnecessary disequilibria within the economy. An increase in petroleum prices would not interfere with that kind of a program; actually, it would not even make a perceptible dent in the "hold-the-line" program if OPA continues to insist on talking about the latter.

As the following table shows, petroleum components have relatively little weight in the total cost of living index:

	% of Total Cost of Living Index[1]
Fuel Oil	0.2
Kerosene	0.1
Gasoline	0.9
Motor Oil	0.1
Total Petroleum	1.3

An increase of 0.85c per gallon in the price of petroleum products would increase the petroleum part of the index by 4.43 per cent. The total index would be increased by 58/1000 of 1 per cent, a rise which could not even be shown by the index at its present level. The total index now stands at 124.8. The increase estimated above to be the result of a higher oil price would raise it to 124.846; the published index would not be changed at all; labor leaders could not demand a wage increase, and the line would be held.

It is unnecessary to labor the point further. The absurdity of the OPA's basing any part of its refusal to grant a crude price increase on a cost of living argument is obvious, and the industry is justified in resenting a denial of its claims on such flimsy grounds.

Very truly yours,

J. D. Gill,

Chairman, Committee on Cost and Price Adjustment.

[1]Bureau of Labor Statistics Cost of Living Index, revised as of March 15, 1943. See **Monthly Labor Review**, July, 1943.

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Some Tools and Methods Used in Cleaning Oil Wells in California

By G. B. Shea

Analysis of Well Conditions

Successful cleaning of wells to stimulate or revive the production of hydrocarbons involves studied analysis of the specific causes of impeded flow of oil and gas into the boreholes and application of methods that will accomplish the desired results with a minimum of expense and loss of oil production.

Often a decline in the productivity of wells or leases that is assumed to have resulted from normal depletion of the oil measures may have been caused by gradual accumulation of detrital material in the wells and the resultant obstruction to free flow of oil through the critical region surrounding the wells and the perforated casings. As a result of the apparently satisfactory and trouble-free operation of wells on a lease operators frequently tend to be satisfied with the daily rate of production of the wells and make no effort to analyze their operations or to determine whether the oil is being recovered efficiently and at maximum rates.

In discussing oil-production efficiency, Parks[3] points out the importance of analyzing well conditions in the following statement:

Detailed studies of well histories, their production characteristics as to cumulative values, rates, pressures, and gravity of oil and a careful analysis of water conditions has led to discovery of long-neglected productive intervals. In short, a thorough investigation of why one well differs from another rather than ascribing this to chance yields good returns. It may also be true that a decline in rate assumed to have been caused by depletion may be due to reduced permeability about the immediate circumference of the well, or between the sand and casing or more simply to clogged perforations alone. There is a large field for remedial work in this respect, but a solution will require the combined efforts of the mechanical washers, the chemical treatments and perhaps more expensive operations involving reperforating or some other method of opening up a fresh sand face to a well. In all this work the determination of the productivity index, the shut-in pressure and all possible geological correlation is essential to intelligent progress.

Through the intelligent use of subsurface-pressure data, engineers usually can determine if a well should be cleaned. If the productivity index of the well is abnormally less than the previous index, clogging of part of the sand face or liner is indicated, provided that inordinate changes have not occurred in the water: oil and gas: oil ratios.[4] If a subsurface pressure survey indicates that the productivity index has not changed since it was previously determined, a clean-out job is not necessary, but the need for replacing or relocating the pump or gas-lift equipment is indicated. Thus a subsurface-pressure survey may save the expense of a useless clean-out job. Productivity indexes also may be determined by fluid-level tests. Furthermore, fluid-level tests are the quickest way to determine whether reduced production is caused by pump troubles or clogged perforations. For example, an abnormally low fluid level in a well compared with that in adjacent wells indicates a clogged condition in the liner, preventing the flow of oil into the well.

Electric and radioactivity logs also may be used effectively in a cleanout program to check original well logs and to determine the nature and depth of formations for which records are not reliable or were not made originally.

If the need for cleaning a well is indicated, economic considerations usually determine whether it should be done. The decision to clean out a well should be based on the value of the expected increase in oil production, the cost of the work, and the probable loss of production during clean-out operations. In judging whether a well should be cleaned, studied consideration should be given to the recoverable oil remaining in the reservoir about the well, as the recoverable reserve must be sufficient to assure the desired increased flow of oil into the well. If depletion of the recoverable oil in the formation has reached the point where the flow of oil into the hole is normal despite partial clogging of the perforations or sand face by detrital accumulations, a clean-out job would not be justified.

An important secondary consideration in determining whether a well should be cleaned is the duration of the effectiveness of reconditioning before it becomes necessary to repeat the work. In most wells the effectiveness of a clean-out and the length of time it is effective vary with the thoroughness of the job. However, in some wells, regardless of the thoroughness of cleaning out, the duration of effectiveness of a clean-out job is relatively short and varies with the tendency toward deposition of mineral precipitates from formation water and the accumulation of paraffin from the crude oil "Floating" or loose material in the reservoir also may quickly clog a newly cleaned sand face or fill the annulus between the casing and the wall of the hole. Although the length of the period of effectiveness of clean-out operations can be determined best by experience, from a broad viewpoint it is generally desirable to clean any

well if the daily production rate and operating efficiency can be increased so that the normal trend of production decline is arrested or restored.

After careful study of the causes of subnormal production rates, the application of proper clean-out methods based upon the kind and location of the accumulations in the well is essential to obtain successful results.

Methods of Removing Sand From Wells

Control of the entry of sand into wells and its relation to ultimate oil recovery and production costs have long engaged the attention of petroleum engineers. The control of sand movement into wells has progressed greatly in recent years through selection of the design and size of perforations based on grain size of the sand and viscosity of the oil, to the end that they perform their proper function—excluding as much sand as possible and allowing oil to enter freely. In addition the recent trend toward gravel packing in completing and reconditioning many wells in California as a means of reducing sand troubles where excessive sanding or sloughing of the formation impedes the flow of oil generally has proved to be a remedy that reduces the infiltration of sand into the hole to a minimum. Operators and equipment manufacturers also have cooperated in developing pumping methods that retard the entry of sand into wells.

Although much has been done to alleviate sand troubles in wells, many California operators still are perplexed by difficult operating problems and loss of production as a result of the sanding of wells. In many wells that are gravel-packed or equipped with liners containing correctly sized perforations, coarse sand is restrained from entering the well, but fine "float" sand is carried by the oil through the perforations or gravel pack into the well. Unless all of the sand in suspension in the oil is carried to the surface, ceaseless accumulation within the well will in time impede or even prevent the flow of oil into the well. Unconsolidated sands in the Wilmington field, for example, contain only a small amount of calcareous cementing material, and in some wells 25 per cent of the oil production

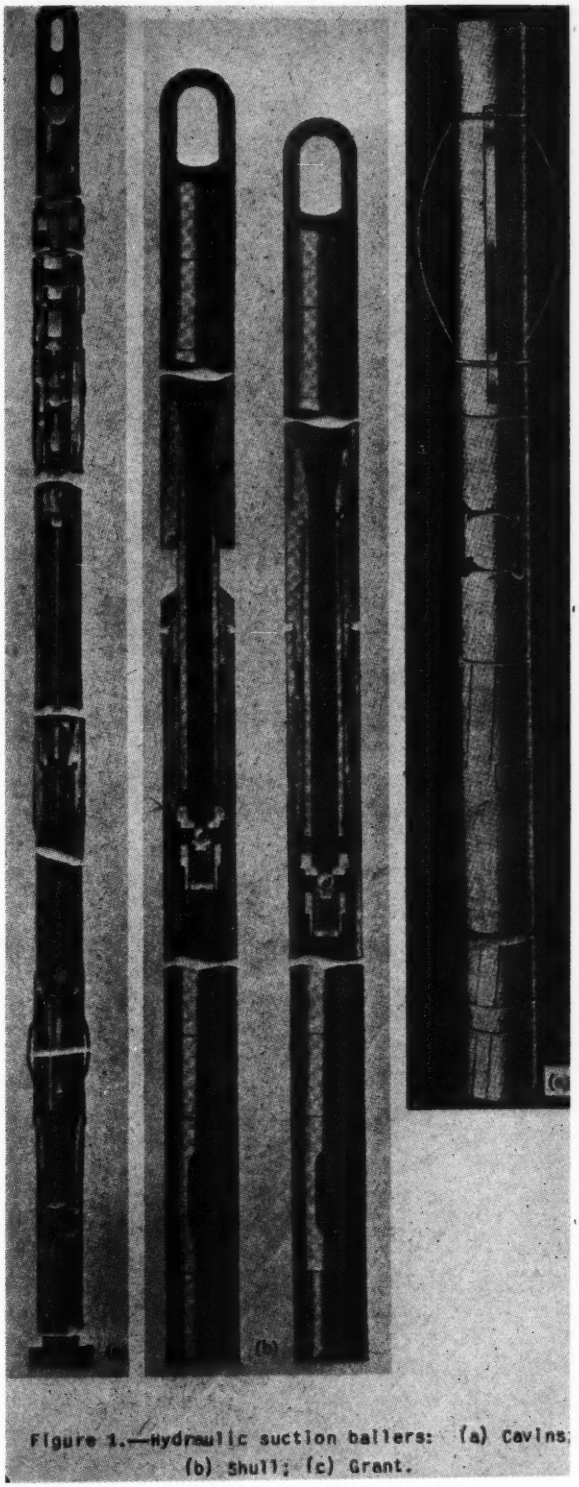

Figure 1.—Hydraulic suction bailers: (a) Cavins; (b) Shull; (c) Grant.

consists of fine-grained sand that remains in suspension throughout the production cycle.

Where large quantities of sand, shale, and silt enter a well the cause may be a defective liner, faulty casing, or a bad casing seat. Sometimes water entering a well will cause sand to enter also. Usually sand plugs formed in wells that ordinarily produce clean oil are loose, unpacked, continuous masses, particularly in wells that yield heavy, viscous oils preventing the sand from packing. On the other hand, in wells that produce water with the oil, sand that has entered the well usually packs tightly and bridges as a result of being water-washed and coated with little oil.

Clean-Out Tools

In routine clean-out operations for removing sand plugs and sand bridges from oil-producing wells, standard bailing tools, hydraulic suction-type, and pump-type bailers are used, depending upon the nature and degree of compaction of the sand accumulations, the characteristics of the producing formations, and the height of the fluid level in the wells. Although standard bailing tools still are used effectively in removing loosely packed sand from shallow wells, they have been largely superseded by pump-action and hydrostatic bailers. Hydraulicking with oil also is used to some extent to remove sand, silt, and fragmentary shale accumulations from wells in the older California fields, where low—A.P.I.—gravity oils are recovered from unconsolidated sands.

Standard Bailing Tools

Winter[5] has discussed in detail the essential requirements for standard bailing tools and the most satisfactory types of these tools used in clean-out work in California, and has recommended bailing procedure. He points out that of the several sizes of casing or tubing commonly used for bailer sections experience has shown that bailers having outside diameters of 4½ inches, 3½ inches, and 2⅞ inches are suitable for all general purposes for the various diameters of wells. Ordinarily in cleaning out sand, bailers comprising stem and jars and one, two, or three 20-foot sections are used, depending upon the height of the derrick. The most satisfactory bailer bottom for clean-out work is the the side-port type with a flapper valve. However, for small bailers, such as 2⅜ inch or 1⅝ inch, a bottom having a ball-and-seat valve instead of a side port usually is necessary.

Bailer-bottom shoes may be two-point, tapered - point, Z - bottom, chisel-type, or saw-toothed. All bailer shoes should be at least ¼ inch larger in diameter than the sections of the bailer to avoid making a "tight hole" or rat-holing and sticking the bailer. Saw-toothed and chisel bottoms should be rounded on the outside edges to preclude ripping the casing when run in the hole or hanging up in collar recesses. Dart-bottom bailers 3½ inches in diameter and smaller should be used only for bailing fluid. If run to bottom there always is danger of breaking the dart.

Hydraulic Suction Bailers

Introduction of the Cavins automatic, hydraulic, suction-type bailer about a decade ago marked an important advance in well-cleaning technique that not only simplified the removal of sand and other materials from wells but reduced the time normally required for clean-out jobs, particularly in deep wells where fluid levels are high. In operation of the hydraulic suction-type or pressure-differential bailer the potential energy of the column of fluid in a well is converted to use when it is changed rapidly to kinetic or active energy by allowing the differential between the pressure head of fluid in the well and atmospheric pressure in the bailer to equalize. The magnitude of the potential energy that may be utilized depends on the height of the fluid level in the well above the depth to which the bailer is run and on the density of the column of fluid. Experience has shown that the most effective results are obtained when the fluid level is at least 500 feet above the bailer. Hard-sand plugs or bridges ordinarily can be removed easily and quickly by the powerful force of the rapid fluid movement into the bailer. As a result, the use of cable or rotary tools in clean-out work has been eliminated in many California fields.

The pressure-differential-type bailer consists essentially of an air-tight chamber in which air is sealed at atmospheric pressure, a mechanism for quickly opening the chamber to the well pressure when the bailer is at the desired position in the well, and a load chamber that contains a bottom valve to retain the load while the bailer is being removed from the well. The bailer is run into the well on a sand line, and the sealed air chamber opens when the bailer strikes the sand plug or bridge in the well. As pressures in the bailer and well tend to equalize, the resulting rush of well fluid into the load chamber of the bailer carries with it sand, shale, and other detrital material. When pressure equilibrium is established and the movement of oil and sand into the bailer subsides, the flapper valve at the bottom closes and retains the load while the bailer is withdrawn from the hole. As the bailer is pulled from the hole a relief valve releases part of the pressure in the suction chamber, and only enough pressure is retained in the air chamber to dump the load automatically so that the bailer can be emptied at the wellhead without danger to the operating crew. Normally, relief valves are set at 100 pounds per square inch. Unloading is accomplished by setting the bailer on the key of a dump plate and rotating the bailer one-half turn to the left. This movement causes the unloading ports of the inner and outer sleeves of the Candee-type bottom to coincide.

At present three general designs of patented hydraulic-suction bailers (Cavins, Grant, and Shull) are being used in California. The main difference among them is the method of sealing the air chamber before

running into the well and opening the chamber at the desired position in the well.

The Cavins bailer (fig. 1, a) has a ball valve between the air or suction chamber and the load chamber actuated by a rod that extends through the air chamber into the jar section. The ball valve attached to the lower end of the rod is kept seated by the upward pull of a stout spring. Before the bailer is run into the well the ball valve is closed, sealing the air in the suction chamber at atmospheric pressure. When the bailer is lowered into the well and comes to rest "on bottom" the jar stem strikes downward, causing the valve at the lower end of the suction chamber to open and expose the atmospheric chamber to the greater pressure head of the fluid column.

Adjustable side ports in the shoe of the Cavins bailer (also Grant bailer) control the direction of loading. In wells where the sand plugs are hard or where the fluid levels are low the side ports may be partly closed to restrict the suction to the cutting edge of the shoe. On the other hand, ports should be left open in wells where fluid levels are high or where the detrital material is soft and sticky. Thus part of the suction is directed to the sides of the shoe, which tends to eliminate the possibility of "rat-holing" and sticking the tool. Furthermore, leaving the side ports open causes the surging action of the ingoing fluid to have maximum effect on plugged perforations. The bailer is unloaded by means of a dumping key, which holds the shoe while the bailer is rotated a half turn to the right, causing ports in the shoe and bailer to coincide. The load is ejected under the regulated pressure in the bailer.

In the Grant bailer (fig. 1, c) a breakable composition disk capable of withstanding high pressure is used to seal the load chamber under atmospheric pressure. A serrated, tubular disk breaker is held in position by a sliding shoe, and when the bailer strikes the top of the sand plug or bridge the upper part of the bailer drops upon the disk breaker with enough force to shatter the sealing disk and cause a powerful surging action through a ball-and-seat valve that permits material to enter the chamber freely but prevents it from leaving. At the derrick floor the unloading port is opened by means of a wrench, and the contents of the load chamber are emptied with the aid of the controlled air pressure remaining in the load chamber. A tubular jar section is attached to the upper end of the load chamber.

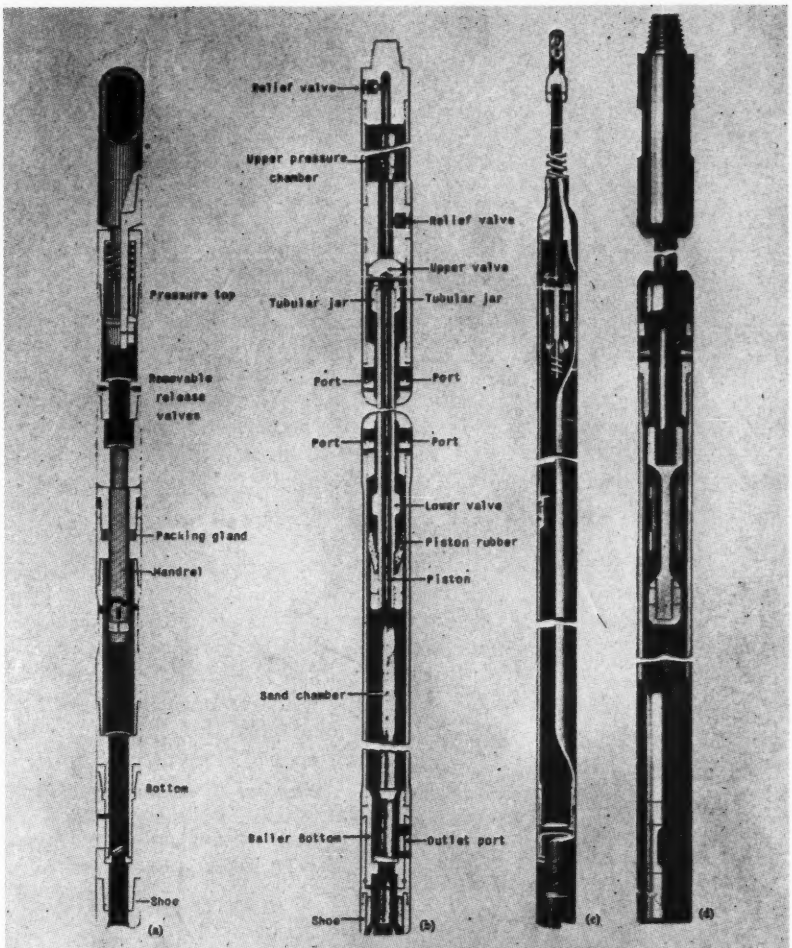

Figure 2.—Pump-type bailers: (a) Fletcher desander; (b) Gates bailer; (c) Cavins rod-type sand pump; (d) Shull sand pump.

In the Shull bailer (fig. 1, b) the inner section, comprising the air chamber and valve assemblies, slides telescopically in the outer section, and when the bailer is set on bottom the inner section moves downward by its own weight, causing the valve in the air chamber to open. The bailer is dumped at the surface by means of a dumping key. Resetting the valve at the bottom of the airtight chamber is unnecessary after the load is dumped, because it seats automatically as the bailer is lifted off the derrick floor and run into the well.

Pump-Type Bailers

Several types of pump bailers and sand pumps are being used effectively in California for removing sand from wells in which fluid levels are low and in loose-sand wells where flushing of the perforations by hydraulic surging is not desirable while the accumulated sand is being cleaned out. Sand pumps also are effective in removing tightly packed sand.

The Fletcher desander (fig. 2, a), consisting of a hollow mandrel op-

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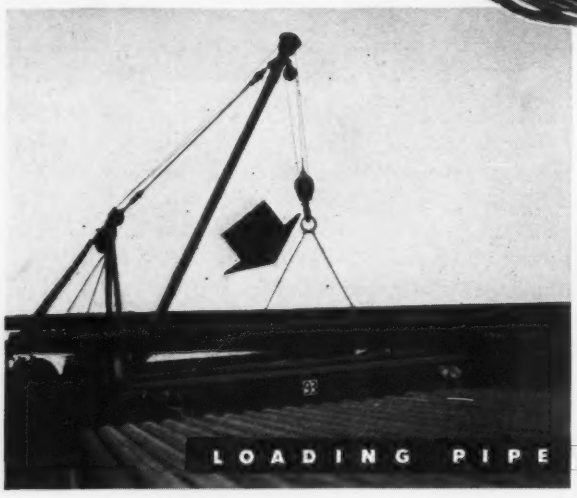

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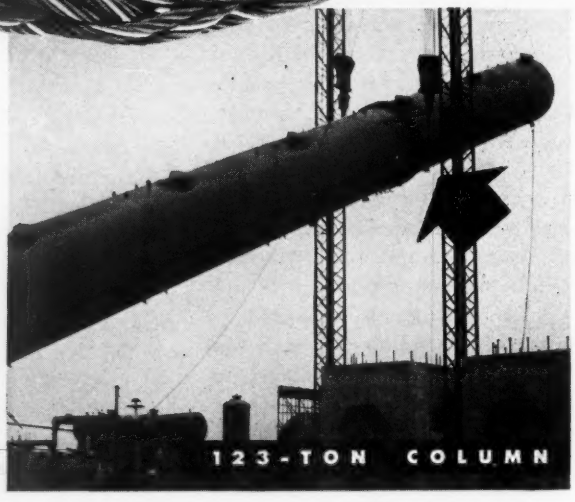

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erating through a packing gland in the upper part of a sand chamber, creates the suction that draws the sand into the chamber. Pump action is obtained by spudding the tool. In spudding, two "pick-ups" are felt in the sand line-first the plunger "pick-up" and then the bailer "pick-up". As the downward movement of the plunger stops at the top of the load in the chamber when the bailer strikes bottom, the "pick-ups" become progressively closer together as the chamber fills with sand. When the two-"pick-ups" are almost simultaneous the bailer is full of sand. Normally, spudding the bailer only three or four times is enough to fill the sand chamber, and further spudding may result in sanding up the plunger.

A spring assembly at the top of the desander prevents the bailer from dropping its load while coming out of gassy wells. Excess pressure in the upper part of the bailer is released through two relief valves. The bailer is emptied on the derrick floor by means of a safety dump key.

Another self-unloading, pump-type bailer[6] (fig. 2, b)—the Gates—consists essentially of a sand chamber and an upper pressure chamber connected by a hollow piston rod having a rubber-packed piston at its lower end that operates in the sand chamber and a valve at its upper end that operates in the upper pressure chamber. The bailer is in an extended position when lowered in the well, with the upper valve and pressure chamber open to the hydrostatic pressure of the fluid in the well. At the same time, the lower valve in the upper part of the sand chamber is closed—the piston being at the top of its stroke. When the bailer "hits" accumulated sand in the well the piston is pushed to the bottom of its stroke, causing the upper valve to close and the lower valve to open. As the bailer is raised the piston returns to the top of its stroke, and the created suction thereby causes sand to enter the sand chamber. Spudding the bailer three or four times usually is enough to cause the sand chamber to fill with sand. A flapper valve in the bottom of the sand chamber retains the load in the bailer. In spudding the bailer, two "pick-ups" on the sand line can be felt, one when the bailer is first lifted "off bottom" and the other when the bailer is half full of sand. Thereafter, three "pick-ups" can be felt each time the bailer is spudded; operation of the jars accounts for a third "pick-up." When the "pick-ups" are close together the bailer is full of sand and ready to be pulled out of the hole.

As the bailer moves upward in the well, the upper valve assembly traps the pressure in the chamber and also acts as a jar between the pressure chamber and the sand chamber. Two relief valves in the top and bottom of the pressure chamber release the high pressures trapped in the chamber while the bailer was on bottom. The recommended pressure-release setting of the bottom relief valve is 100 pounds per square inch or just enough to dump the load safely when it reaches the derrick floor. Accordingly, the top relief valve should be set at a slightly higher pressure than 100 pounds per square inch to prevent the pressure in the top of the chamber from causing the fluid in the lower part of the chamber to escape instead of the entrapped gas. The bailer is unloaded on the derrick floor by means of a dumping key. When the outlet ports are opened to the atmosphere, the controlled pressure in the pressure chamber at the top of the bailer is released through the hollow piston rod into the sand chamber and forces out the sand.

The Cavins rod-type sand pump (fig. 2, c) is a plunger-type bailer comprising a thick-walled, seamless-tube working barrel with a plunger assembly and lifting ring mounted on a solid-steel plunger rod that slides through the lifting head. The plunger head is fitted with synthetic rubber designed to afford maximum resistance to abrasion and deterioration by oil, water, and gas; the plunger rod is surmounted by a bail or rope socket. When the bailer strikes the top of the sand plug or bridge in the well the sand line is allowed to slacken, permitting the plunger to move downward to the bottom of the working barrel. A combination bypass and check valve built into the plunger head assures a positive seal on the up stroke and maximum clearance for the bypass of fluid on the downstroke, allowing quick dropping of the plunger in the bailer. When the plunger has traveled the full length of the downward stroke an upward pull on the sand line raises the plunger and closes the bypass valve in the plunger assembly. As the plunger travels upward the suction created at the bottom of the bailer draws sand into the load chamber where it is trapped by a flapper valve. Portholes in the upper end of the working barrel permit fluid that may be above the plunger to escape during its upward stroke. The short working stroke required to operate the bailer and the fact that the working parts do not come in contact with the material being removed from the well reduce to a minimum the danger of the plunger becoming sanded up. The loaded bailer is dumped automatically at the well-head by retained pressure.

The pressure-top assembly, use of which is optional with the operator, is designed to prevent gaseous loads from being blown out through the portholes while the bailer is being withdrawn from the well.

The Shull sand pump (fig. 2, d) is a simply designed, self-unloading bailer with few working parts. By spudding the bailer three or four times on top of the sand plug or bridge in the well the solid steel plunger, operating through an 11-foot stroke, creates a high vacuum in the 28-foot-long working barrel (sand chamber), which rapidly and completely fills with sand. The weight of the solid-steel plunger tends to push the shoe of the bailer into the sand plug or bridge with great force. When the loaded bail-

(Continued on Page 23)

ANNUAL DIRECTORS' MEETING CALIFORNIA NATURAL GASOLINE ASSOCIATION, Los Angeles, Calif., July 20, 1943: Standing, left to right: Randal Maass, General Pet. Corp., chairman, fall meeting committee; M. L. Arnold, Richfield Oil Corp., John C. Herron, Shell Oil Co., Inc.; W. L. Rifenberick, Industrial Engineers, Inc.; J. B. Taylor, Signal Oil & Gas Co.; D. A. Cushman, O. C. Field Gasoline Corp.; R. S. Tulin, Shell Oil Co., Inc.; J. C. Gilbert, Barnsdall Oil Co.; J. A. Campbell, J. A. Campbell Co.; W. A. Kirk, Calif. Southern Oil Co.; H. W. Parmelee, Del Valle Gasoline Co.; R. C. Wheeler, General Pet. Corp.; I. B. Funk, Cowan Oil & Refining Co.; O. C. Field, O. C. Field Gasoline Corp.; Harold Saueressig, So. Calif. Gas Co., chairman program committee; R. R. Crippen, The Texas Co., chairman, technical committee; W. C. Dayhuff, Standard Oil Co.; George L. Tyler, secretary, C. N. G. A. Seated, rear rows: left to right: L. W. Wilbern, Daniel Orifice Fitting Co., chairman, membership committee; L. V. Cassaday, Lomita Gasoline Company; G. C. McLaren, director and chairman finance and budget committee; Warren Kraft, Honolulu Oil Corp.; H. A. Dresser, Fluor Corp., Ltd., chairman entertainment committee; Harold Linhoff, Richfield Oil Corp.; R. D. Gibbs, director and chairman, gas report committee. Seated, front row, left to right: P. S. Magruder, General Pet. Corp.; R. W. Heath, Signal Oil & Gas Co., president, C. N. G. A.; C. D. Gard, Union Oil Co., vice-president, C. N. G. A.; John Rogers, Cooper-Bessemer Corp.

R. W. Heath, Signal Oil & Gas Co., President and Director, California Natural Gasoline Association 1943-44.

C. D. Gard, Union Oil Co. of Calif., vice-pres., director and chairman of advisory committee, California Natural Gasoline Association 1943-44.

Randall Maass, General Petroleum Corp., Chairman, fall meeting committee, Calif. Natural Gasoline Association 1943-44.

STANDING COMMITTEE CHAIRMEN, CALIFORNIA NATURAL GASOLINE ASSOCIATION, 1943-44; Standing, left to right: G. C. McLaren, Standard Oil Co., finance and budget committee; R. D. Gibbs, Union Oil Co., gas report; L. W. Wilbern, Daniel Orifice Fitting Co., membership; Harold Saueressig, So. Calif. Gas Co., program; C. D. Gard, Union Oil Co., advisory; Seated, left to right: Randal Maass, General Petroleum Corp., fall meeting; R. R. Crippen, The Texas Co., technical; H. A. Dresser, The Fluor Corp., Ltd., entertainment.

L. W. Wilbern, Daniel Orifice Fitting Co., chairman, membership committee, California Natural Gasoline Association 1943-44.

R. R. Crippen, The Texas Company, chairman, technical committee, California Natural Gasoline Association 1943-44.

John Kunkel, The Fluor Corp., Ltd., chairman Publicity Committee, California Natural Gasoline Association, 1943-44.

Reducing pressure subject areas

SAVES STEEL AND MONEY, GIVES BETTER RESULTS

A. Gray Composite Manifold, concentrates all parts into one unit;

B. Casing hanger seals;

C. Conventional gasket groove.

The first requisite in the control of pressures is to minimize the pressure subject areas. To control pressure from the casing strings, the seals should be as small as possible. This is accomplished in Gray Systems of Well Control by moving the seal from the large casing head flange areas to smaller casing hanger areas. **Casing hangers perform the multiple service of hanging casing and maintaining seals both within and without the casing they support.** Seals are obviously the most important element in a control structure, for the very purpose of the control structure is to seal that which it controls.

As increased pressures are encountered at greater depths, sizes of casings are necessarily reduced, diminishing the pressure load exerted against the casing. Obviously, it is doubly important that diameters must be held to a minimum in the design of surface equipment. The Gray design of tapered casing hanger seals on smaller diameters than conventional gaskets, thereby materially decreasing the loading of all surface equipment—casing head housing, flanges, bolts, etc. With the Gray double tapered casing hanger, there is increased joint efficiency and sealing capacity.

You get these definite advantages by reducing pressure subject areas in this manner:

1. **Saving of materials—decreased physical loadings of materials gains more strength with less weight; e.g., lighter flanges, lighter bolts, lighter valves and control assemblies provide proportionately larger factors of safety.**
2. **Structures are maintained large enough to permit essential operations while at the same time control devices are small enough to maintain the proper ratio of balance with the casings upon which they are used.**
3. **As depth increases, casing sizes are reduced to withstand pressures encountered; sizes of surface control equipment are likewise reduced, effecting a consistent balance of the whole.**
4. **The reduction of weight through the minimizing of pressure subject areas contributes generally toward increased safety, simplicity, flexibility, and convenience.**

For complete details of this and other Gray methods and products, write to Gray Tool Company, P. O. Box 1655, Houston 1, Texas.

GRAY
TOOL COMPANY
HOUSTON, TEXAS

West Coast Distributor: WAGNER-MOREHOUSE, INC., Los Angeles
Export Representative: GUY E. DANIELS, 30 Rockefeller Plaza, New York City

TO SAVE NATURAL RESOURCES AND CRITICAL MATERIALS IN PEACETIME MAKES GOOD BUSINESS SENSE; TO SAVE NATURAL RESOURCES AND VITAL MATERIALS IN WARTIME BECOMES A PATRIOTIC OBLIGATION.

J. D. Gill Issues Timely Statement

Petroleum Industry War Council

To Members of the Committee on Cost and Price Adjustment:

Your punches have often been pulled when making a bid for price adjustments because of reluctance to provide anybody with the slightest opportunity to charge you with a profiteering spirit in an era demanding the utmost of patriotism and self-sacrifice. The staff of the Committee has been considering this aspect of your problem and in what follows offers a rationalization of a position which you might consider worthy of occupation.

Seeking Reasonable Profit Incentives No Cause For Apology

Fundamental Economic Law of Individualism Recognized by New Deal and by Russia

We are getting hungry for crude oil because OPA did not provide the financial incentive to alleviate the obvious need for increased exploratory effort. The East Coast area has been hungry for 15 months because of the lack of suitable incentives for speeding up the delivery of oil to that area. The OPA has so consistently, indeed continuously, whittled at profits through the hardening of price ceilings that the industry is becoming abashed at the thought of expressing its needs for higher prices, because higher prices constitute incentives which OPA assumes should not be required by businessmen in a wartime economy, but the recognition of the need for stimulus is a dire necessity.

Even soldiers need stimulus; it may not be financial in character, but it is impelling. When some other kind of stimulus can be found for labor and management we can forget price and profit incentives. The purpose of this article is to show authoritative acknowledgment of the need for incentives all along the line.

Two news dispatches recently appeared on the same day, one from Washington and one from Moscow. In connection with the failure last month of the American aircraft industry to reach its production goal, it was learned that government stabilization agencies are re-examining the whole wage structure of the industry, particularly with a view to installing a broad plan of wage incentives. It is the contention of several high officials of the WPB that such a system generally applied will raise production in the aircraft industry 10 per cent without expansion of the labor force.

From Russia it was announced that wage reforms, designed to give higher pay to skilled labor, are being put into effect, beginning with a reorganization of pay levels in the oil industry so that basic wages will be rated on nine levels. This move is the first in a far-reaching reorganization throughout Soviet industry and is designed, according to the official proclamation, as a powerful stimulus for increased production. Under the new schedules, it will be possible to earn as much as 75 per cent over the base rate for individual performance.

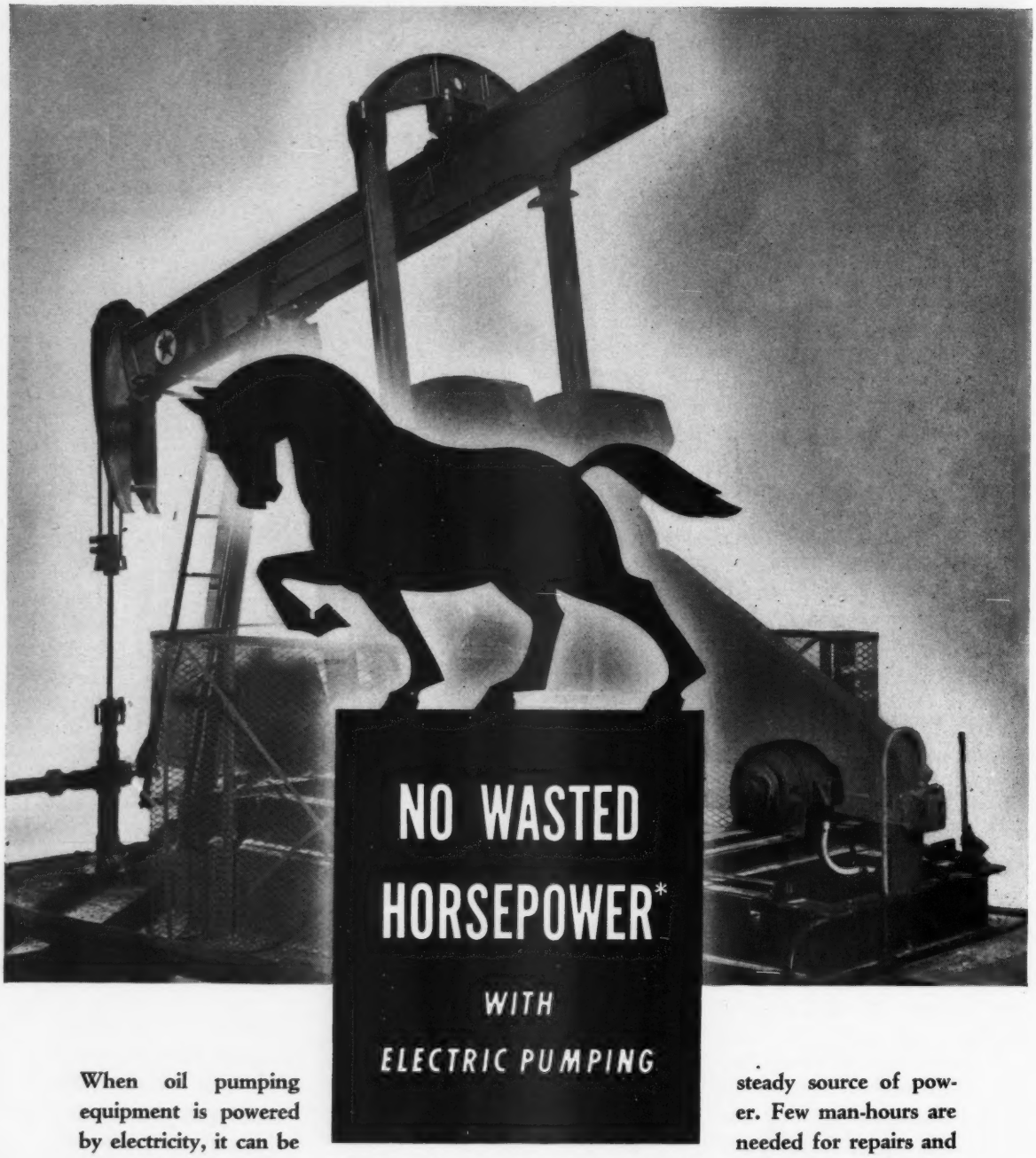
These two developments signify recognition of the fact that human beings being what they are, incentives are necessary to stimulate individuals to approach maximum productive activity. It is not an exaggeration to say that this is the most fundamental and immutable of all economic laws, but its importance was for a long time completely denied in Russia, and to most observers at least it seemed to have been completely forgotten by New Dealers in this country.

The principle of the necessity of incentives, or the profit motive, applies to business management and individual entrepreneurs equally as much as it does to individual workmen. Actually, profits are in a sense the wages of management, the results of the unselfish effort of management on behalf of somebody else. New Deal theorists, however, have tended by disapproving of profits to ignore the profit motive as the most driving of all economic forces. It will be recalled, nevertheless, that when a crisis impended after we entered the war, theories were revised in a hurry and full recognition was given to profits as a stimulus in the generous terms of Army and Navy contracts.

The new trend of thinking in Russia is, of course, more startling than the reconversion of certain groups in this country to truths from which we had really not strayed very far. That incentive wages really are an aspect of a very definite trend is borne out by certain other recent economic developments in Russia which are worthy of mention. It appears that, for the first time since the Revolution, high income groups are emerging from the collectivised proletariat. Private farming and private trade are permitted, some goods are no longer restricted as to price, and the possession of large private savings is being explicitly encouraged. As proof of this, a farmer recently donated one million roubles to the Red Army, and was rewarded by a personal letter of praise and thanks from Stalin. A Russian "millionaire" would have seemed like a contradiction in terms a few years ago, but today there are apparently many of them.

This whole trend has a broad significance for the future. The probability is growing by leaps and bounds that all the great free countries of the world are in a state of accelerated economic evolution, but instead of all of them being blown by the same wind in the same direction, the impelling force appears to be centripetal. That is to say, some of the nations are on the "left side" economically and some are on the "right side", but the strong fundamental forces which we have been discussing are drawing them all in

(Continued on Page 24)



**Another Advantage Emphasized by War*

When oil pumping equipment is powered by electricity, it can be operated at the proper speed to exactly match the well's capacity. Only the horsepower required is used—none is wasted.

Electric pumping has other important advantages. There is less wear on machinery because an electric motor is a smooth, steady source of power. Few man-hours are needed for repairs and maintenance. The electric motor itself remains in good condition longer with less attention. You can start it by touching a button, or it will operate automatically.

Let an Edison oil field engineer give you full proof of these facts.

Waste in war is a crime. Do not waste electricity just because it is not rationed.

SOUTHERN CALIFORNIA EDISON COMPANY LTD.

Standard Oil Patents Bought from Germany to Make Gasoline Out of Coal and Shales Became Source of Critical War Materials

In discussing "War and Postwar Problems of American Industry," in the August issue of MINING AND METALLURGY, official publication of the American Institute of Mining and Metallurgical Engineers, John R. Suman, vice-president of Humble Oil & Refining Co., and a former president of the Institute, outlines the real contribution of the oil industry to the synthetic rubber program.

"The charge was made," says Mr. Suman "that because of patent contracts between companies in this country and in Germany, production of synthetic rubber was suppressed. Actually, the basic hydrogenation patents in question, together with related processes for the treatment of petroleum with catalysts, were purchased for $35,000,000 from I. G. Farbenindustrie in 1929, twelve years before we became involved in war and lost access to our national rubber. It just so happened that the patents were never used on any large scale for the purpose intended, which was the production of gasoline from asphalt or coal shales, because of sizable discoveries of crude oil in the late twenties and early thirties dispelled the fear of a crude oil shortage and reduced the price of crude to a point so low that hydrogenation was economically unattractive. My own company learned this from experience for Humble spent $3,000,000 on a hydrogenation plant at Baytown before the project was abandoned. However, the patents were the basis of many other useful developments, notably synthetic rubber, 100-octane aviation fuel, and toluene, which are of incalculable value in our war program."

Synthetic Rubber Only a Dream in 1929

Mr. Suman points out that the purchase of the patents for the making of gasoline from asphalt and coal in 1929 gave the Standard Oil Company of New Jersey rights to the synthetic rubber developments which were only a dream at the time. "When the developments of this war required us to turn to the production of synthetic rubber," he says, "the nation was fortunate in the fact that the petroleum industry already knew the technical processes by which this might be done. Let me emphasize that without the knowledge resulting from the purchase of the original German patents, we would today be months, if not years, farther away from the solution of our rubber shortage. The failures to develop synthetic rubber production was not due to any conspiracy as has been falsely charged, but to the simple economic reason that high-cost synthetic rubber was not competitive with low-cost natural rubber except in certain highly specialized uses.

Problem Was to Arouse Government's Interest in Rubber

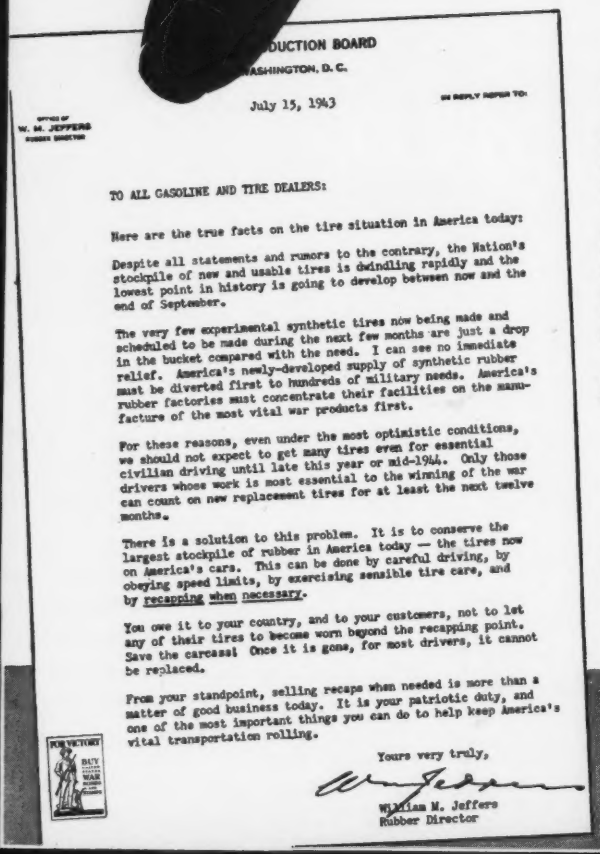
"One of the most important facts in the entire synthetic rubber situation," he continues, "has been obscured by the smoke screen created by the prosecution of the petroleum industry by the Department of Justice. The true story of the oil industry's efforts in behalf of the production or increase of the national output of synthetic rubber begins when the war started in Europe and particularly just after the fall of France. At that time several of our leading industrialists became conscious of the desirability of establishing synthetic rubber production as a safeguard to our national defense and urged the Government to engage in such a program. For example, during 1940 H. C. Wiess, president of the Humble Company, presented in some detail to the Government agencies considering this problem a plan by which quantities of synthetic rubber might be manufactured by several companies, with financial support from the R.F.C., in order that knowledge of the processes might become widely disseminated, but even then innumerable delays occurred and the program finally authorized in the summer of 1941 was quite small. This is understandable in view of the fact that few people then expected that we could be cut off so rapidly from our normal sources of crude rubber, but it clearly demonstrates that the oil industry did not try to restrict synthetic rubber production. The positive efforts made by private industry to encourage synthetic rubber production failed only because of a lack of Government interest and financing."

Oil Industry Producing Needful War Materials

"As I have indicated," continues Mr. Suman, "the hydrogenation patents also provided the basis for the process of making toluene from petroleum. This process was developed over a period of several years by technical research, and if it had not been available, this country's supply of petroleum bases for toluene production would have been critically short. To use my own company as an illustration, in spite of Thurman Arnold, investigating committees, and Government rules and regulations we are well ahead of our scheduled program of production of critical war materials. One of our refineries produces more critical petroleum war products, principally 100-octane gasoline and toluene, than any other plant in the world. Here again it is apparent that private enterprise, motivated by business reasons, actually served the country better than could have been done if the primary consideration had been that of national defense."

No. 1 IN A SERIES OF ADVERTISEMENTS TO PROMOTE CONSERVATION OF THE TIRES ON AMERICA'S CARS. SPONSORED BY PETROLEUM INDUSTRY WAR COUNCIL

This open letter from America's Rubber Director to every Gasoline Dealer reveals new facts on Tire Situation!



...DUCTION BOARD
...ASHINGTON, D. C.

July 15, 1943

IN REPLY REFER TO:

OFFICE OF
W. M. JEFFERS
RUBBER DIRECTOR

TO ALL GASOLINE AND TIRE DEALERS:

Here are the true facts on the tire situation in America today:

Despite all statements and rumors to the contrary, the Nation's stockpile of new and usable tires is dwindling rapidly and the lowest point in history is going to develop between now and the end of September.

The very few experimental synthetic tires now being made and scheduled to be made during the next few months are just a drop in the bucket compared with the need. I can see no immediate relief. America's newly-developed supply of synthetic rubber must be diverted first to hundreds of military needs. America's rubber factories must concentrate their facilities on the manufacture of the most vital war products first.

For these reasons, even under the most optimistic conditions, we should not expect to get many tires even for essential civilian driving until late this year or mid-1944. Only those drivers whose work is most essential to the winning of the war can count on new replacement tires for at least the next twelve months.

There is a solution to this problem. It is to conserve the largest stockpile of rubber in America today — the tires now on America's cars. This can be done by careful driving, by obeying speed limits, by exercising sensible tire care, and by recapping when necessary.

You owe it to your country, and to your customers, not to let any of their tires to become worn beyond the recapping point. Save the carcass! Once it is gone, for most drivers, it cannot be replaced.

From your standpoint, selling recaps when needed is more than a matter of good business today. It is your patriotic duty, and one of the most important things you can do to help keep America's vital transportation rolling.

Yours very truly,

William M. Jeffers
Rubber Director

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

THE LETTER AT LEFT, written by W. M. Jeffers, America's Rubber Director, states the cold, unadulterated facts on the tire situation. We want you to read it—every word of it—because it may be the means of keeping you in business.

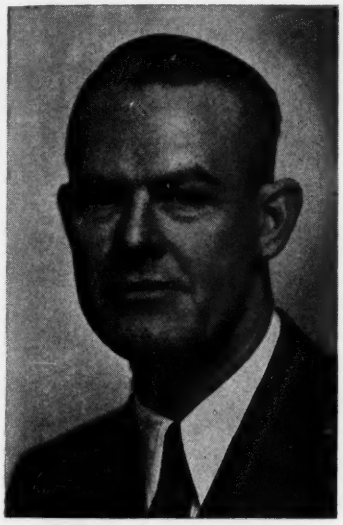
For, it means that if you and every other gasoline dealer in the United States do not see to it that your customers take good care of their tires, you will not have any customers to service. For once a tire has worn past the re-capping stage, the only thing that tire is good for is the scrap heap.

Keeping your customers rolling becomes more than good business. It is your patriotic duty, and vital to America's transportation!

PETROLEUM INDUSTRY WAR COUNCIL
(Created by The Petroleum Administrator for War)
PRODUCTS CONSERVATION SUB-COMMITTEE

Industrial Division of Pacific Gear Works Moves to Western Gear Works, Lynwood, California

Glenn E. Henderson, Manager of Oilfield Division of Pacific Gear Works, has made the announcement that the Industrial Division of Pacific Gear Works, which was formerly located at 2053 E. 38th St., Vernon, California, has just been moved to their new plant, Western Gear Works, located at Imperial and Alameda Blvds., Lynwood, California. The Vernon plant will now be used for light gearing and aircraft gear products.



Glenn E. Henderson
Manager, Oilfield Division
Western Gear Works

The movement of the Pacific Gear Works, Division, Western Gear Works, to the large new plant at Lynwood, will materially increase their manufacturing capacity. The heavy tools formerly used at the Vernon plant will be moved to Lynwood to supplement the large tools in the Lynwood plant. In order to handle the heavy units, a new crane way has been installed at Lynwood, having three times the capacity of the one at Vernon. Large herringbone gear units are now being manufactured in the new plant up to 1000 horsepower.

Mr. Henderson states that the new location for the Industrial Division at the Western Gear Works plant at Lynwood and the new Commercial Offices on Long Beach Blvd., are especially planned and set up to handle with greater efficiency the increased business of the oil industry.

All future correspondence and business in connection with this Division should be directed to the Western Gear Works' new Commercial Offices located at 11181 Long Beach Blvd., Lynwood, California. Telephone Nevada 6-1812.

New Assistant Treasurer, Standard of California

Herbert D. Armstrong, formerly with the Federal Reserve Bank of San Francisco, has been elected assistant treasurer of the Standard Oil Company of California, it was announced on Aug. 11th by H. D. Collier, president of the company.

Mr. Armstrong took his new post August 16th, filling the position recently vacated by H. C. Judd, now treasurer of the company.

A graduate of the Univeristy of California and Hastings School of Law, Mr. Armstrong was admitted to the bar in 1933. A year later he joined the law firm of Agnew and Boekel, and became assistant to the firm's senior partner, Albert C. Agnew, general counsel to the Federal Reserve Bank of San Francisco.

In 1939 Mr. Armstrong became head of the discount and credit department of the Federal Reserve Bank. When evacuation of Japanese residents in San Francisco took place in 1942 he was made head of the Evacuee Property department of the bank. Last December he became assistant cashier in charge of foreign funds control operations, handling alien funds and frozen funds of invaded nations and has continued in that capacity until now.

Herbert D. Armstrong

E. A. Miller Joins Lane-Wells Co.

E. A. (Doc) Miller has been appointed general shop superintendent of Lane-Wells Company, according to an announcement made recently by Rodney S. Durkee, President. He will have charge of manufacturing operations in the Los Angeles plant which has been enlarged to manufacture war material in addition to their regular oil well tools and specialized service equipment.

E. A. "Doc" Miller

Miller comes to his new post with a broad background of experience with leading oil companies and oil well equipment manufacturers.

Born in Louisiana, "Doc" Miller first went to work for Magnolia Petroleum Company where he served his apprenticeship as a machinist. He moved to California in 1922 and started with the General Petroleum Corporation.

McCullough
GUN PERFORATOR
COMPLETION METHODS
Brown Line Print No. 3

Set Thru

KEEP YOUR HOLE FULL-SIZE FOR FUTURE OPERATIONS

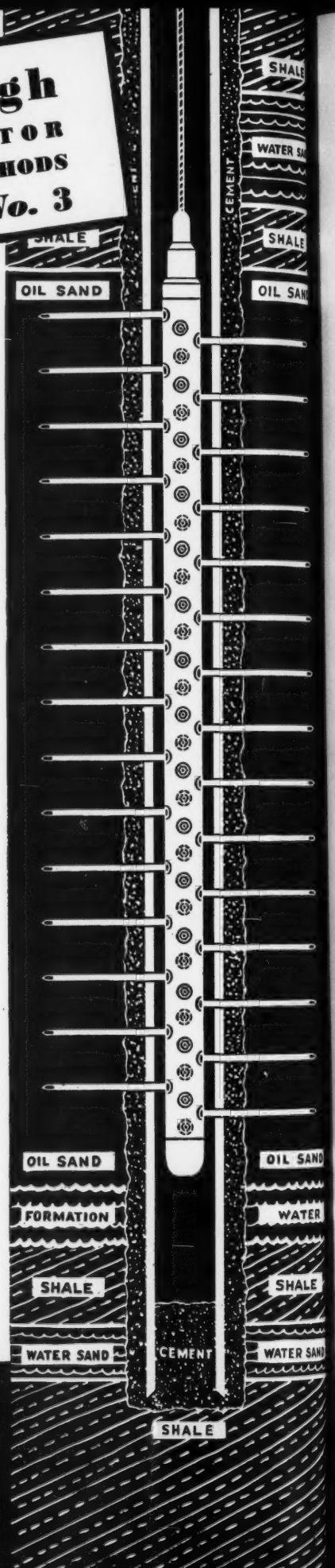
WHEN the time comes, any work-over job can be done easier, at lower cost, and with greater assurance of success if the hole is large. The practice of setting the casing to the full depth of the well, cementing it solid, and then gun perforating selected zones, provides a large hole for future operations. During the life of the well, this large-diameter working space will pay for itself many times over, besides providing additional production advantages. Moreover, the solid cement sheath protects and supports the casing and eliminates water entry.

For Accurate Location and Deep Penetration, Use the

Hard Shooting-exact S-P-A-C-I-N-G

McCullough

GUN PERFORATOR



16 SERVICE LOCATIONS

McCULLOUGH TOOL COMPANY . . . 5820 South Alameda Street, Los Angeles, California

HOUSTON, TEXAS
WICHITA FALLS, TEXAS
VICTORIA, TEXAS
CORPUS CHRISTI, TEXAS
GEO. WEST, TEXAS
TYLER, TEXAS
SHREVEPORT, LA.
HOUMA, LA.
LAKE CHARLES, LA.
OKLAHOMA CITY, OKLA.
SEMINOLE, OKLA.
CASPER, WYOMING
BAKERSFIELD, CALIF.
VENTURA, CALIF.
AVENAL, CALIF.

THIS LAUGH

OFF!!

The man applied for a job as a butler and Lady Gotrich was very painstaking in her examination of the applicant. "We dress for dinner," she explained, "and we require our butler to wear breeches and stockings. That I may be sure that you would look well in breeches, will you show me the calf of your leg." The applicant readily complied and the lady expressed approval. "I think you will do," she said. "Now may I see your testimonials."

Telling about it later the would-be butler said, "You know, I think that if I had a little better education I would have landed that job."

"But, Betty, don't you trust me?"

"Yes, Lloyd, I'll go to the ends of the earth with you; but I absolutely refuse to park on the way."

"I'll be tickled if we find a gas station soon; the gas is running low," he said.

Said she: "I suppose I'll be tickled if we don't."

The average fellow lets his girl get on the bus first, not because it's polite, but because it's a treat.

The soldier was a sentimental youth, who had been suffering for some time from severe lovesickness.

"What's the matter?" asked his buddy.

"I can hardly tell you," the soldier faltered. "I have at last proposed and I have been turned down."

"Never mind," cheered his buddy. "It'll come out all right in the end. A woman's 'No' often means 'Yes'."

"Maybe it does," was the sorrowful reply. "But this woman didn't say 'No.' She said 'Nuts!' "

When God gave out brains, I thought
He said trains,
And I missed mine!
When He gave out looks, I thought
He said books,
And I didn't want any!
And when He gave out noses, I thought
He said roses,
And I ordered a big one!
When He gave out legs, I thought
He said kegs,
And I ordered two fat ones!
When He gave out ears, I thought
He said beers,
So, I ordered two long ones!
When He gave out chins, I thought
He said gins,
So I said "Give me a double!"
God, am I a mess.

A Selby preacher remarked that he feared that some of his congregation were going to hell deliberately so that they could have a ringside seat to watch Hitler burn.

A man wearing thick glasses applied at the marine recruiting office.

"No chance for you with those glasses," said the sergeant.

The applicant took off the glasses, saying he didn't need them.

"Whose picture is that on the wall?" asked the sergeant.

"George Washington."

"Whose picture is that on the far wall."

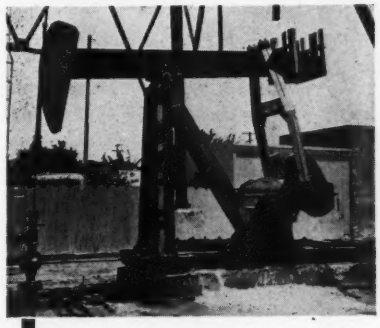
"Abraham Lincoln," said the applicant. "Also I can see that one-eyed cat coming in the door out there."

"That settles it," snorted the sergeant. "That cat isn't coming in, he's going OUT."

The world is full of willing people. Some are willing to work; others are willing to let them.

"Will you ever stop loving me?" she asked.

"Well," said the sergeant, "I'll have to be at reveille at 7 o'clock in the morning."



An Offer

Looking at a JENSEN Pumping Unit will get you nowhere. You've got to talk with a man who owns one, or with us. The difference is 25 years in the manufacture of pumping equipment . . . experience around the world . . . advice, criticism, encouragement, experiment, improvement. You can't take a picture of things like that. They have got to be measured by performance.

Let us give you the facts about JENSEN Jacks—facts no producer can afford to ignore. It's an offer.

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Coffeyville, Kansas, U.S.A.

EXPORT OFFICE: 50 Church St., New York City

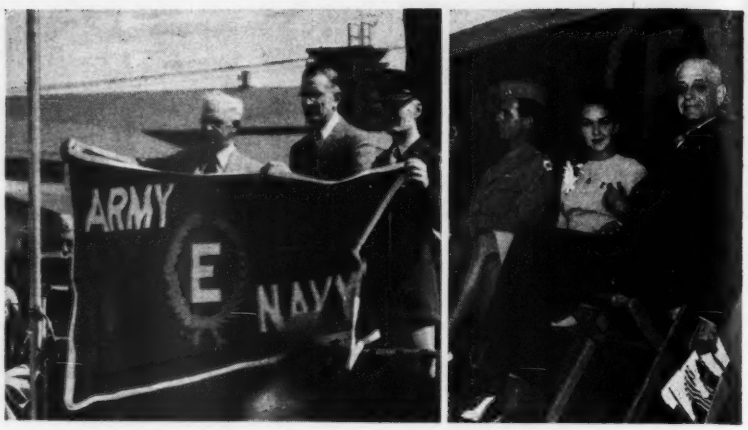
30-Shot, Four-Way Gun Perforator

McCullough Tool Company, Los Angeles, Calif. and Houston, Texas., is now operating a gun perforator which produces six perforations per foot, or 30 perforations in a five foot section. The perforations are in four staggered rows 90° apart. When a zone of considerable thickness is to be perforated, several guns are joined together to perforate a section of 10, 15 or 20 feet on each run. The spacing of the perforations is the same when the multiple guns are used. When more than six holes per foot are desired, the casing is perforated a second time, the gun being positioned an inch higher or lower than the first time. Thus, four additional staggered rows of holes are obtained, giving twelve holes per foot.

Due to the fact that all shots are fired simultaneously while the gun perforator is at rest, the spacing of the perforations is exact and uniform, being a projection of the position of the barrels in the gun perforator.

The 3½-inch O.D. gun fires ¼, ⅜, ½, and ⅝ inch bullets. The 4½-inch O. D. gun fires ¼, ⅜, ½, ⅝ and ¾-inch bullets.

As in the case of all other McCullough gun perforators, the 30-shot guns are fired either electrically or mechanically when run on wire line. McCullough completely equipped service units, operating from 16 service branches in active domestic areas, carry the required conductor cable, line measuring device of proved accuracy, and all other equipment. This gun perforator can also be run on drill pipe or tubing, either singly or in multiple, and is fired mechanically by means of a go-devil dropped inside the pipe or operated on a measuring line. This latter method permits the utilization of careful measurements of the pipe in positioning the gun perforator at the exact point designated in the hole.



BAKER OIL TOOLS, INC., WINS "E" FLAG

Colorful ceremonies, attended by some 700 persons, marked the presentation on August 11th, 1943 to Baker Oil Tools, Inc., at 6000 South Boyle Avenue, of the Army-Navy "E" Flag for "excellence in the production of war material."

The presentation was made by Col. K. B. Harmon, Chief, San Francisco Ordnance District, to R. C. Baker, president, representing the company, and Betty Rice, C. A. Jensen and A. C. Pazdernik, representing the employees.

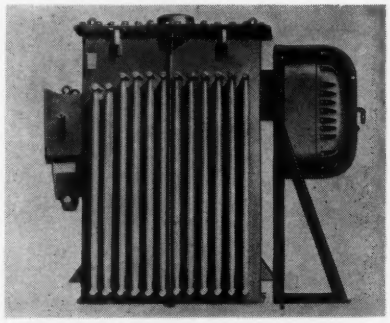
General Electric Announces Load-Center Unit Substations For Semihazardous Locations

A line of load-center unit substations for semihazardous locations in oil refineries, chemical plants, and other plants having similar conditions, has been announced by the General Electric Company. Available in standard ratings from 100 to 1000 kva at 480 volts and 100 to 500 kva at 208/120Y or 240 volts, these unit substations can be used indoors or outdoors for power and lighting service of 600 volts and below. Primary voltages from 2.4 to 15 kv can be handled.

The new line incorporates a liquid filled primary disconnecting switch, standard Pyranol or oil-filled transformer section, and a low-voltage section with a 600-volt, easily removable air circuit breaker. The units are completely metal-enclosed, co-ordinated, factory built substations. All arcing parts are either liquid immersed or in enclosures of Class I, Group D, construction.

The transformer has four 2½-per cent taps (two above and two below normal-rated high voltage, and for rated kva) in the high-voltage winding. An externally operated, manual tap changer is furnished for operation only when the transformer is de-energized.

The incoming line switch is mounted integral with the transformer section and is equipped for breaking transformer magnetizing



current. A key-type interlock works in conjunction with a similar lock on the low-voltage breaker to prevent the switch from being operated when load is on the transformer.

The low-voltage section is furnished with either a manually or an electrically operated main secondary air circuit breaker with time-over-current protection and instantaneous short-circuit trip. The circuit breaker is mounted in a Class I, Group D, metal enclosure.

Some Tools and Methods Used in Cleaning Oil Wells in California

(Continued from Page 11)

er reaches the derrick floor, the contents are dumped by holding the shoe of the bailer stationary and rotating the shell.

Hydraulicking With Oil

In applying the hydraulicking process,[7] the usual practice is to pull the rods and tubing from the well, remove the pump, and re-run the tubing to the top of the sand plug or bridge. Oil under pressure then is pumped down and out of the bottom of the tubing at a velocity that will cause the sand to be hydraulicked into suspension in the oil and permit it to be circulated out of the well. The hydraulicking action is increased by the use of a nozzle—a swaged nipple is commonly used—attached to the bottom of the tubing.

Where hydraulicking is applicable, it is one of the most economical and rapid means of removing loose sand and tightly packed sand plugs and bridges. In the Wilmington field, for example, while reservoir pressures still were high, wells were cleaned out by hydraulicking in about one-fourth of the time required to remove the sand with a string of clean-out tools and a bailer.[8] With the decline in reservoir pressure, however, hydraulicking has been discontinued because the high hydrostatic head of the hydraulicking oil caused as much as 1,000 barrels of oil to be lost to the formation in some wells.

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[3]Parks, E. K., Recent Trends in Production Practice: Petrol. World, Ann. Review, 1939, p. 243

[4]Jones, N. N., Practical Use of Subsurface Pressure Measurements in East Texas; Oil Weekly, December 16, 1940, p 18.
Higgins, R. V., Productivity of Oil Wells and Inherent Influences of Gas: Oil Ratios and Water Saturation: Bureau of Mines Rept. of Investigations 3657, 1942, 50 pp.

[5]Winter, Henry E., Reconditioning Procedure with Portable Equipment: Am. Petrol. Inst., Drilling and Production Practice, 1937, p. 202.

[6]Gates, Paul G., Pump-Type Bailer: U. S. Patent 2166489, July 18, 1939.

[7]Suverkrop, Lew, The Use of Fluids in Cleaning Oil Wells: California State Mining Bureau, Summary of Operations, California Oil Fields, Vol. 9, No. 7, January 1924, p. 5. Hydraulic Methods Used in Various Fields for the Cleaning of Wells: Oil Field Eng., July 1927, p 21.
Suman, Geo. O., Flooding, Washing, and Hydraulicking Wells: Oil Weekly, May 22, 1931, p. 31.

[8]Albright, John C., New Methods Clean Out Wilmington Wells Faster: Oil Weekly, March 27, 1939, p. 51.

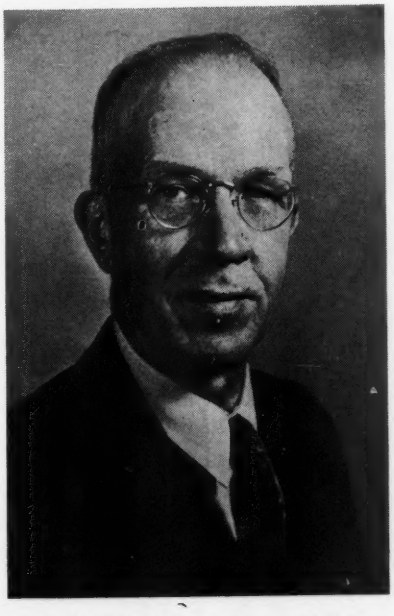
Reprinted by Permission from the Bureau of Mines, Report of Investigations, No. 3706

The second installment which deals with the methods of cleaning perforations and annulus between the liner and sand face, will be carried in the next or 1st September issue.

Reeder Advanced By Union Oil Co.

J. C. Reeder has been appointed Manager of the Los Angeles Refinery of Union Oil Company of California succeeding the late Ray G. Bray, according to an announcement by W. L. Stewart, Jr., Executive Vice President.

Mr. Reeder has been active in the Manufacturing Division of the Company for many years, having served as Superintendent of Operations prior to taking over the assignment as Acting Manager of the Refinery in April of this year when Mr. Bray was called to Washington to work with the Director of Refinery of the P.A.W. While serving in that position Mr. Bray died of a heart attack on June 25th.



Merle M. Moore, recently appointed superintendent Standard of California's Bakersfield refinery. (See story in California Oil World's First August Issue).

Standard of California Men Promoted

Leroy H. Hines and Hartwell H. Kuester have been appointed assistant managers of the land and lease division of the producing department of the Standard Oil Company of California, according to announcement today by E. G. Lawson, general manager of exploration.

Mr. Hines was born in Nebraska. A graduate of the Washington, D. C. College of Law, he was admitted to the bar in that City and entered the Company's employ in 1935 as a leaser in the land and lease division. He was lease specialist on government land matters before his present appointment.

Mr. Kuester was born in Oakland, California, and was educated at Oregon State College and at the University of California. He began working for Standard of California while a student at college, and later entered the producing department. He served successively as chief clerk, leaser and senior leaser. His current assignment includes leasing activities in connection with Standard of California exploration projects.

Tideland Returns Consistently Good

Development of the State owned tideland oil pools in the Huntington Beach field is demonstrating steadily increasing reserves with each Jones Sand well added to the producing roster. Southwest Exploration Co., pioneer of the new work in this pool, has thus far completed four new wells in the zone. The new producers are reported aggregating 1500 bbls. daily of good quality crude under curtailed flow conditions. Huntington State Co., which recently finished its phenomenal producer State No. 1, is plugging to redrill State No. 2 from 1000 ft. after reaching 1500 ft. where a fault zone made it impossible to direct the hole seaward toward the objective sands.

You Can't Afford Leaky Valves

- Repair parts are scarce
- New Valves require high priorities
- Your present Valves have to serve better-longer
- Regrinding helps make them last longer
- Note the Illustrations showing the six simple operations required

They're expensive and they may result in costly slow-downs and sometimes even shut-downs—which can't be tolerated in these critical times.

With proper care . . . periodic inspection to locate even slight leaks . . . and immediate repair, your valves will serve you better and last longer.

Lunkenheimer Valves are easy to keep in good operating condition. Seats and discs can be readily reground and all parts are quickly accessible without taking the valves out of the line. Properly cared for, they give you a practically permanent installation.

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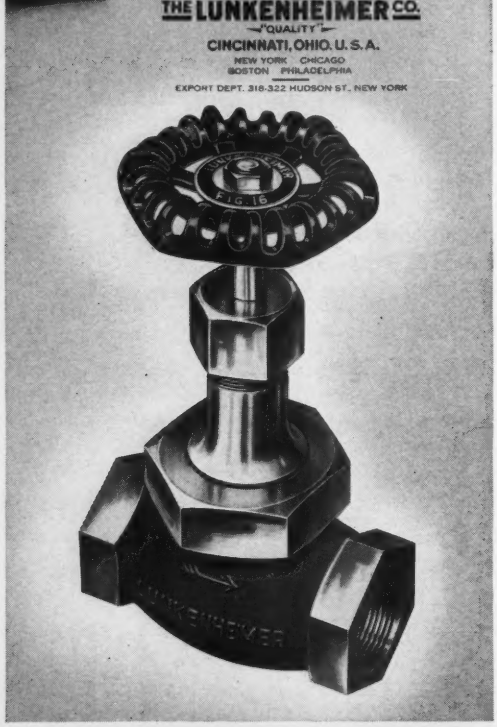
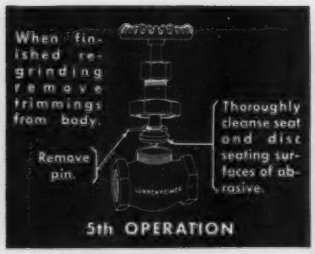
1st OPERATION

2nd OPERATION

3rd OPERATION



Replace trimmings in body and regrind.
Extension on bottom of hub should enter neck of body while regrinding.
Allow union ring to remain loose.
4th OPERATION


When finished regrinding remove trimmings from body.
Remove pin.
Thoroughly cleanse seat and disc seating surfaces of abrasive.
5th OPERATION

6th OPERATION

LUNKENHEIMER VALVES

J. D. Gill Issues Statement

(Continued from Page 15)

the direction of a common center. Thus the United States is trending gradually to the left and has in fact progressed rather far in that direction from the extreme rightist position of twenty or thirty years ago. Russia, on the other hand, is trending rightward toward the center in the direction of free enterprise and emphasis on individual initiative. It seems likely that the two economies may eventually arrive at economic positions not far apart, and in view of all indications those positions will be more closely related to individualism and some form of capitalism than to collectivism and Socialism.

There is no reason to be ashamed of seeking profits. In peacetime, competition will see that they are never excessive and in wartime the renegotiators and OPA will police the motive of patriotism which will hold the vast majority of businessmen to a reasonable profit level. If industry does not uphold the sound incentive principle, nobody else will uphold it, and industry and its consumers both will suffer.

Very truly yours,
J. D. GILL,
Chairman, Committee on Cost and Price Adjustment.

Greenville "Cat" Starts

P. M. Girard Mark Fisher No. 1 in the Greenville area of Orange county is under way. Located on sec. 27-5s-10w, some four and a half miles east of the Huntington Beach 5 Points area, the well was last reported standing with 11¾ in. surface casing cemented at 482 ft. The test is situated near the Standard Oil Co. Santa Ana Gardens No. 1 which abandoned at 5219 ft. some years ago.

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.... is at the first sign of an emulsion problem. Your TRET-O-LITE representative will test your oil, and have a familiar red drum on the job in short order. Don't wait until your shipping tanks are full of wet oil — you'll "see red" then, but not pleasantly. Tret-O-lite's fast and economical action is a sure way to keep out of the red on the cost sheets, too.

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DEHYDRATING DESALTING

Field Development

Los Angeles Basin

Texaco Starts 12,000 Ft. Try

The Texas Co. poured foundation for Fields No. D-1 in the Long Beach field. Located northwest of Spring and California Streets at the northerly field flank, the try is projected as a 12,000 ft. driller unless substantial deep production is indicated at a higher point. This field, which produces at many levels, is already productive at the 10,000 ft. mark in the southerly section and is held to yet offer new producing horizons.

In the northwesterly field area, General Exploration Co. of Calif., new operator of the Hilldon Oil Co. properties, is fishing liner to redrill and deepen Pool No. 3, west of the Pacific Electric right-of-way and south of San Antonio Drive. This well was completed at 4182 ft. in 1938 for 1040 bbls. of clean 24 gravity oil.

Royal Planning 7 Redondo Wells

Royal Petroleum Co. is starting the first of seven new wells on the old Gen. Pet. Corp. Carson lease in the Redondo section of the Torrance field. First under way will be No. 14 which will utilize the surface installations of the company's recently abandoned No. 13, in which the casing collapsed.

Le Bow-McNee's most recent completion is Dominguez Estate No. 2-1 which is pumping an average 70 bbls. daily clean 15 plus gravity oil. This operation will be followed by four immediate projects while St. Francis Oil Co. is under way with Spencer Comm. No. 1 and drilling below 1500 ft.

In the southwest area Geo. D. Nordenholt, Operator is preparing to start No. 2 at Pearl and Susana Streets while his No. 1 yet pumps 41 bbls. of clean 21.8 gravity oil daily from 3292 ft.

Good Harbor Well Finished

Long Beach Oil Development Co. completed "W" No. 44 in the Long Beach Harbor area of the Wilmington oil field at 3005 ft. flowing 590 bbls. of clean 18.1 gravity oil through a 48/64 in. bean. Settled return was 326 bbls. daily with a 24/64 in. orifice. This company, in response to repeated demands by governmental agencies, is undertaking complete development of the municipal acreage under its operation. At present 12 new projects are preparing to start while "W" No. 62 is drilling in grass-root stages.

Recent completions in the Wilmington field saw O. M. Slossons Wing No. 1 and Atlantic Oil Co.'s Meeker No. 1 on the pump for an average 140 bbls. daily each. Ready to finish are DeMarsh Oil Co. Phillips No. 3, Westgate-Greenland Oil Co. Youngstown No. 1, R & S Oil Co. Community No. 909-1 and Coast Supply Co. Breslin No. 1, while many new strings are getting under way.

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Aliso Canyon	Standard Oil Co., Frew	1-1	29, 3-16	1807	Drilling
Del Valle	Standard Oil Co., N.L. & F.	3-1	19, 4-17	3613	Drilling
Las Llajas	Western Gulf Oil Co., Brady	1	13, 3-17	9610	Sidetracking
Montebello	Barnsdall Oil Co., Baldwin	1	11, 2-11	2860	Drilling
	Cont. Oil Co., Baldwin	1	3, 2-11	5879	Abandoned
Newhall	P. M. Girard, Fisher-Wosk	1	6, 3-16	5160	Drilling
Norwalk	Gen. Pet. Corp., H. B. Allen	1	12, 3-12	1372	Drilling
Puente	Barry Oil Co., Inc., Rowland	1	14, 2-10	2423	Idle
	Horace Steele, Opr., Kenwood	1	17, 2-10	450	Drilling
	J. C. Drilling Co., Kelso	1	12, 2-10	2940	Drilling
	McCartney, Chas. E., Hurley	1	4, 2-10	3073	Drilling
	V. & F. Oil Co., Grazide	1	27, 2-10		Location
Rice Canyon	General Pet. Corp., Mendota	1	22, 3-16	4225	Drilling
Temescal	The Texas Co., Dominguez	57-1	1, 4-18	5913	Fishing
Whittier-La Habra	H. & C. Oil Co., Joyce	1	22, 2-11	5825	Idle
	Los Nietos Valley O. Co., Woodward	1	29, 2-11	3583	Rigging up
	Orange County				
Greenville	P. M. Girard, Mark Fisher	1	27, 5-10	482	Drilling
	San Bernardino County				
Chino	Chino Hills Oil Co., Kraemer	1	33, 3-28		Location

Puente Well Cores Showings

Chas. E. McCartney's Hurley No. 1, sec. 4-2s-10w, was last reported coring oil sand and streaks of gray sand at 3073 ft. This well recovered heavy oil sand in the interval 2222-2288 ft. and is considered the most promising test yet drilled in the area. On section 17 of the same township Horace Steele, Operator's Kenwood No. 1—a Fernando-Puente contact zone try—is under way after cementing surface casing. In the easterly area on section 12, J. C. Drilling Co. Kelso No. 1 is deepening at 2940 ft. after sidetracking a drill pipe fish left in the old hole by the original operators in 1939.

Las Llajas Try Redrilling

Western Gulf Oil Co.'s Brady Estates No. 1, sec. 13-3n-17w some two miles south of the old Pico Canyon field and Northwest of Aliso Canyon, is sidetracking at 9258 ft. after failing to recover a drill pipe fish left in the hole when the rig caught fire and burned while drilling at 9610 ft.

Central Basin Well Drilling

General Petroleum Corp.'s H. B. Allen No. 1—projected deep test a little more than a mile and a quarter southwest of the Santa Fe Springs field—is drilling below 1400 ft. after cementing 13⅜ in. surface pipe at 1009 ft. Located in the southwest quarter of sec. 12-3s-12w. the current try is the first put down in the immediate area.

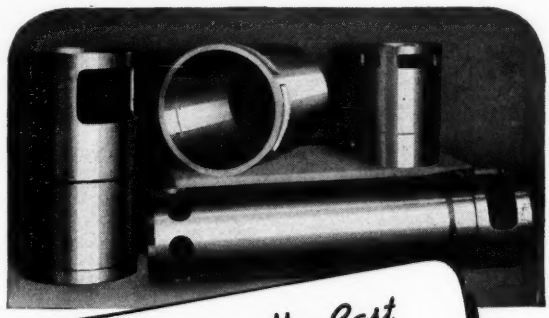
Canyon Outpost Coring Shows

Tide Water Assoc. Oil Co.'s Standard-Sesnon 1 No. 2, outpost to the Aliso Canyon field on sec. 28-3n-16w, is coring sandy siltstone showing oil and gas at 8758 ft. The try seeks Sesnon zone production already proved prolific at the field flank. Within field limits on the same section, the Company's Porter No. 47 is running liner to complete after a barefoot trial from the shoe of 7 in. at 8050 ft. and bottom at 8276 ft. flowed clean 23.5 gravity oil thru a 14/64 in. bean at an 1178 bbl. daily rate and gas at a 489,000 cu. ft. rate. The well bottomed in streaks of oil sand and shell with sandy siltstone showing oil.

Some one and one-half miles southwest of the field, near the south quarter corner of sec. 29-3n-16w, Standard Oil Co. spudded Frew No. 1-1 and was last reported slowly making hole at 1807 ft.

Whittier Well Planning Test

Los Nietos Valley Oil Co. Woodward No. 1, at Sorensen and Washington Blvd. in the Whittier area, is rigging up to make open hole tests of an aggregate 35 ft. of oil sands which showed promise on a recent electric log. Bottomed at 3583 ft. on sec. 29-2s-11w, south of the town, the well will try the Bell zone equivalent at 3230 ft. and Meyer zone equivalent sands at 3450 and 3500 ft.



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DEPENDABLE OPERATION. For thirty-two years Reliance Regulators have been preferred for their originality of design by which positive lockup and steadiness of outlet pressure are assured under variable loads and inlet pressures. Simplicity reduces installation cost, minimizes maintenance service, reduces size and weight and saves metal for defense. Reliance Regulators are available in spring-loaded, weight-loaded and pilot-controlled types, for inlet pressures up to 1000 pounds per square inch and for outlet pressures down to a few inches of water.

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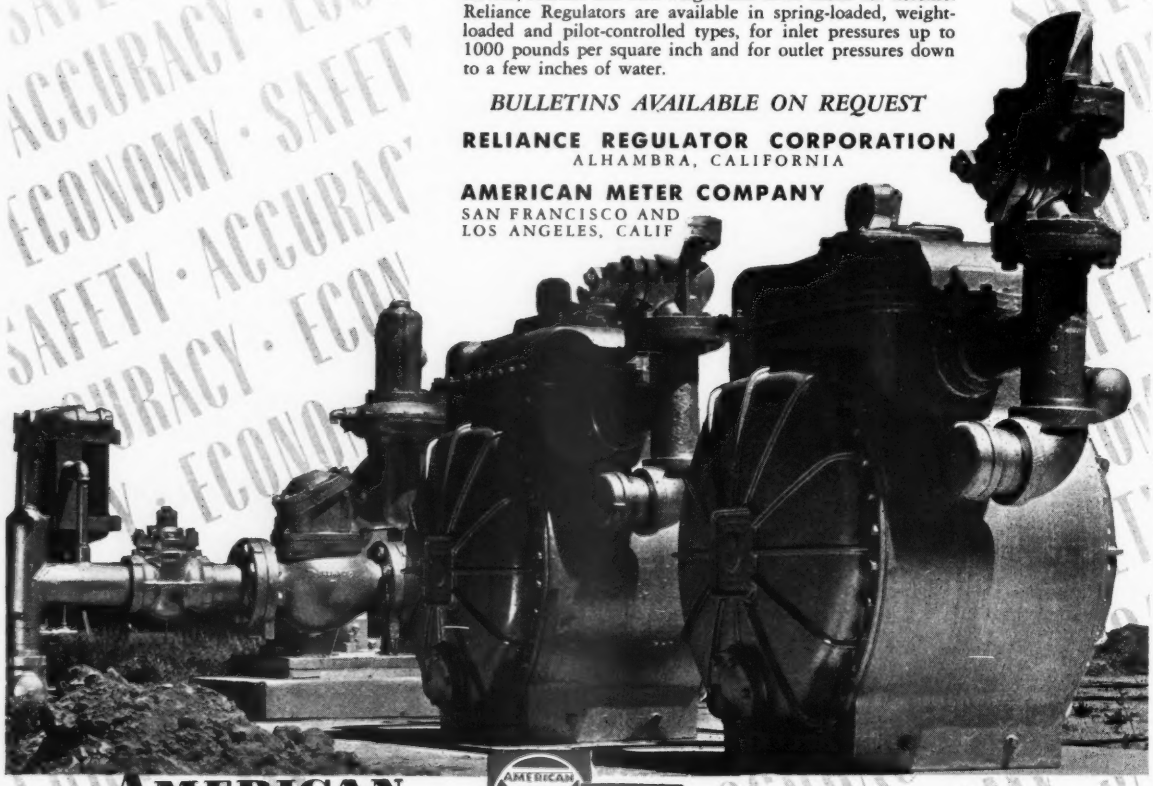

AMERICAN METERS

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RELIANCE

RELIANCE REGULATORS

Coastal District

Cat Canyon Well Demonstrates Worth

Pacific Western Oil Corp's Los Alamos No. 23, sec. 36-9n-33w at Cat Canyon, proved a rich producer when it finished at 5870 ft. flowing 20 gravity oil at a 2316 bbl. daily rate through a 44/64 in. bean. Currently shut in pending tankage, the project will be immediately followed by No. 24 which is now rigging up some half a mile to the southeast.

Gate Ridge Well Nears Objective

The Petrol Corp. Magenheimer No. 651, on sec. 4-8n-32w, is nearing completion. Last reported in Cherty shale at 4100 ft. the well seeks production from the Monterey Chert which averages about 800 ft. in thickness and has produced heavily since discovery in 1931 by the Barnsdall Oil Co.

Two Work At Conejo

Two projects are under way at Conejo. First started is Allied Properties, Inc. Camarillo No. 2 in sec. 4-1n-20w, which was last reported drilling in basalt at 65 ft. after entering the rock at 49 ft. To the north on sec. 23-2n-19w, Sulphur Springs Oil Co. is rigging up to deepen the 4526 ft. Janss No. 1 which was suspended in late 1940.

Piru Try Suspended

Continental Oil Co. suspended Holser No. 2 on sec. 14-4n-18w. Bottomed at 8147 ft. after coring several intervals of oil sand, the try was tested at intervals up-hole from bottom to 4755 ft. without finding commercial production. Also in this section, Standard Oil Co.'s Crestmont No. 1 is drilling in shale showing steep dips at 5833 ft.

In the Temescal producing sector of the area, Pacific Western Oil Corp. Temescal No. 14 is drilling in gray sand at 9464 ft. This well is attempting to settle once and for all the deep zone possibilities of the field area.

Yolo County Test Planned

Empire Oil and Gas Corp. is preparing to drill a test in western Yolo county. The well, Porterfield No. 1, will be put down on lot "L" of Arnold and Gilligs subdivision of a part of Rancho Canada de Capay ,and un-sectionized area.

South Mountain "Cat" Drills

F. E. Fairfield S. M. No. 1, sec. 19-3n-20w, is drilling in sticky red shale at 3410 ft. The operator recently cemented 6⅝ in. pipe at 3229 ft. after the old 8⅝ in. casing went bad.

Lodi Area Gasser In

Amerada Pet. Corp. again effected Lodi area gas production when Community No. 15-1, sec. 15-4n-7e, was completed in the interval 2280-2320 ft. flowing 6,420,000 cu. ft. through a ¾ in. bean and was shut in. Another Northern California area produced gas when Shell Oil Co., Inc. completed Shell-Buttes Comm. No. 1 on sec. 2-15n-1e at Marysville Buttes from 6100 ft. This well flowed a four and one-half million cu. ft. maximum rate and settled to 2,150,000 cu. ft. of gas through a 2 in. open line.

Richfield Starts Chico Creek "Cat"

Richfield Oil Corp. is drilling Chico No. 1 at 1078 ft. on sec. 17-21n-1e in the Chico Creek area of Butte county.

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
	Santa Barbara County				
Casmalia	O.C. Field Gas. Corp., Arellanes	1-F	13, 9-35	1898	Pumping
	O.C. Field Gas. Corp., Casmite	2	13, 9-35	1500	Drilling
Lompoc	Alphonzo E. Bell Corp., Lompoc	7	28, 8-34	4391	Drilling
Los Olivos	Hub Oil Co., La Laguna	1	7, 7-30	831	Drilling
Purisima Hills	Whittier Assoc., Barham	1	11, 7-32	4692	Drilling
Santa Rosa	The Texas Co., Petan Inv.	1	20, 6-32		Foundation
Tinaquaic	Union Oil Co., Sisquoc C. H.	2	28, 9-31	2967	Drilling
	Ventura County				
Bardsdale	Camarillo Oil Co., Camarillo	2	32, 2-20		Rigging up
Conejo	Allied Ppty, Inc., Camarillo	2	4, 1-20	65	Drilling
	L. A. Basin Oil Co., Well	1	4, 1-20	1746	Abandoning
	Sulphur Springs Oil Co., Janss	1	23, 2-19	4526	Rigging up
Eureka Canyon	El Rika Oil Co., Well	5	33, 4-18	225	Drilling
Fillmore	Standard O. Co., Fillmore Comm.	2-1	24, 4-20	6348	Drilling
Piru	Continental Oil Co., Holser	2	14, 4-18	7979	Suspended
	Pac. West. O. Corp., Temescal	14	4, 4-18	9464	Drilling
	Standard Oil Co., Crestmont	1	14, 4-18	5833	Drilling
Sespe	Volunteer Pet. Co., Tar Creek	3	28, 5-19	850	Drilling
South Mt.	F. E. Fairfield, S. M.	1	19, 3-20	3410	Drilling
Torrey Canyon	Union Oil Co., Torrey	60	5, 3-18	5730	Drilling
Wiley Canyon	Wilshire Oil Co., Ford	1	1, 3-19		Rigging up

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Butte	Richfield Oil Corp., Chico	1	17, 21n-1e	1078	Drilling
Contra Costa	Cal-Bay Corp., Faria	1	21, 2n-1w	715	No report
	Standard Oil Co., Keller	1	26, 2n-1e	3671	Drilling
Glenn	Superior Oil Co., Knight	1	13, 21n-2w	6340	Drilling
Monterey	Royalty Service Corp., Federal	1	21, 24s-10e	3600	Drilling
San Joaquin	Amerada Pet. Corp., Comm.	15-1	15, 4n-7e	2700	Completed
	Standard Oil Co., Holt Comm.	1	15, 1n-5e	1575	Drilling
Solano	Standard Oil Co., Honker Comm.	1A	25, 3n-1w	7026	Drilling
	Standard Oil Co., Fontana Farms	1	23, 3n-1w		Rigging up
	Standard Oil Co., Suisun Comm.	3	5, 3n-1w		Location
	The Texas Co., Stewart	74-7	7, 4n-1e	3260	Drilling
Sutter	Shell Oil Co., Buttes Comm.	1	2, 15n-1e	6103	Completed
Tehama	The Texas Co., Walbridge	1A	32, 28n-2w	3047	Abandoned
Yolo	Empire O. & G. Corp., Porterfield	1	Ro. Capay		Location
	Shell Oil Co., Inc., Glide	1	15, 7n-3e		Rigging up
	The Texas Co., Winchester Six	1	20, 7n-4e		Location

Casmalia Well Now Producing

O. C. Field Gasoline Corp. Arrelanes No. 1-F, sec. 13-9n-35w, bottomed at 1898 ft. and by circulating distillate was completed pumping an average 150 bbls. of 8 gravity oil. The heavy oil zone is again to be immediately tapped for the Company's Casmite No. 2 on an adjacent location is running casing to set over the sand at 1500 ft.

Los Olivos Try Resumes

Hub Oil Co.'s Los Olivos area try, La Laguna No. 1 on sec. 7-7n-30w, is making hole at 831 ft. after being shut down several weeks because of water shortages. The vital drilling fluid is now available since the company laid some three miles of line to bring it in.

Purisima Hills Well Drilling

Whittier Associates Barham No. 1, in the East Purisima Hills, is drilling ahead in fractured brown shale at 4692 ft. Located on sec. 11-7n-32w, the wildcat cored oil showings in the Monterey from 2472-3254 ft. which, although not yet adequately tested, indicate a strong possibility of production.

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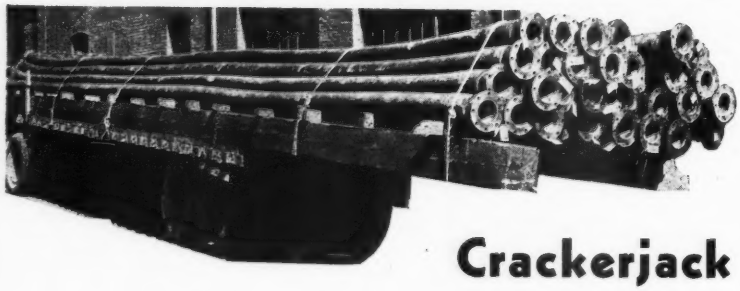
Fillmore "No-Dope" Wildcat Drilling

Standard Oil Co.'s Fillmore Community No. 2-1, sec. 24-4n-20w, is drilling at 6348 ft. without formation data being available. Reported drilling in an effort to find production on the down side of a thrust fault play where no deep drilling has ever been done, the well constitutes the kind of exploratory drilling expected to be prevalent in future California wildcatting.



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San Joaquin Valley

Greeley Outpost Quits in Basement

Standard Oil Co.'s exploratory KCL No. 12-6, in sec. 30-29s-26e south of the field producing limits, is abandoned in Basement rock at 13,666 ft. after finding the base at 13,610 ft. This well was deepened to explore the full section after once being abandoned at 11,942 ft. Originally drilled in 1939 this well effected production which was given a 4214 bbl. daily potential thru a restricted bean with a 6.0% fresh water cut. This high yield however gradually diminished and the cut steadily increased to a non-profitable point, and all efforts to effect a shut-off unavailing, the well was abandoned early in 1940.

In the field the company is completing KCL No. 11-38 at 11,510 ft. after topping the Rio Bravo at 11,446 ft. and the Vedder at 11,498 ft. while its Wegis Comm. No. 1, at the southeasterly field flank, is drilling at 10,075 ft.

C. C. M. O. Trying Midway Field Flanks

Chanslor Canfield Midway Oil Co., large property holder in the Midway-Sunset fields, is consistently developing its holdings. In addition to its inside drilling which is steadily under way, the company consistently carries on an extension program. Currently working is well No. 11-7 on the west flank of the Republic Pool. Last reported at 1920 ft. the well is already scheduled to be followed by No. 12-7 in the same section. Also newly projected is No. G-1 some 1237 ft. north and 2191 ft. west of the southeast corner of sec. 20-31s-22e at the northwesterly field edge.

Tide Water Gets Strand Producer

Tide Water Assoc. Oil Co. completed KCL No. E-4-7, sec. 7-30s-26e, in the Stevens zone at 8490 ft. Entered at 8210 ft. the sands produced at an 1145 bbl. daily rate thru a 5/16 in. bean. Last production figures gauged the capacity at 841 B/D 34.2 gravity 7.0% 6/16 in. bean 800/900# and 410,000 cu. ft. of gas. In the East Strand area where the company recently found production, the operator is rigging up KCL No. 54-8 for another try at delineating the yet small producing limits.

Standard Quits McKittrick Try

Standard Oil Co. abandoned well No. 89-7 in sec. 7-30s-22e at 5146 ft. Bottomed in brown shale the try found no saturation. In the field Tide Water Assoc. Oil Co. is rigging up to deepen its 913 ft. Reward No. 30 on section 13 of the township.

Trico Completes Round Mt. Pumper

Trico Oil & Gas Co. finished Coffee No. 13, sec. 8-28s-29e, at 1490 ft. pumping 100 bbls. daily clean 15.8 gravity oil. The companys next driller will be a wildcat on sec. 5-28s-29e. Rig for this well, Workman No. 1, is up on a location near the south quarter corner of the section.

Huron Area Test Fails

General Pet. Corp is fishing formation tester packer in its redrilled Burrel No. 1 on sec. 2-17s-18e of Fresno county. Once abandoned at a barren 9400 ft. the well was redrilled to 6257 ft. where a test of streaks of poorly stained sands in

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
	Fresno County				
Curry Hills	Standard Oil Co., Camino	2-1	31, 21-15	2195	Drilling
Huron	Gen. Pet. Corp., Burrel	1	2, 17-18	9400	Redrilling
Jacalitos	Standard Oil Co., Well	67-17E	17, 21-15		Rig
	Standard Oil Co., Wells Fargo	1	30, 21-15		Location
Guijarral Hills	R. S. Lytle, Well	86-20F	20, 20-16	8770	Testing
Lanare	Amerada Pet. Corp., Cal. Lds.	65-15	15, 17-18		Cellar
Polvadero	Standard Oil Co., Bourdieu	5-1H	1, 21-16		Rigging up
Raisin City	Univ. Consol. Oil Co., Taylor	1	14, 15-17		Location
	Kern County				
Belridge—South	Berry Oil Co. ,Anderson	1	36, 28-20	315	Drilling
Comanche Point	T. W. Burnham, Chiquita	2	34, 12-19	1972	Circulating
Edison	J. Paul Getty, Portals	2	5, 30-29	4263	Abandoned
	Tracy Harkness Seale	2	5, 30-29		Rig
Elk Hills	Pac. West'n & G.F. Getty, McNeil	1	22, 30-24		Location
Fellows	C.C.M.O. Co., Well	11-7	7, 32-23	1920	Drilling
Grapevine	Richfield Oil Corp., Tejon	4	34, 11-19	5625	Abandoned
	Kern Line Oil Co., Well	1	19, 11-19	8390	Redrilling
Kern Front	Kern Front Drlg. Co., U.S.	1	10, 28-27		Location
McClung	Continental Oil Co., KCL	G-1	4, 30-26	8069	Drilling
	Superior Oil Co., KCL	12	3, 30-26	13131	Rigging up
McKittrick	Standard Oil Co., Well	89-7	7, 30-22	5146	Abandoned
Mt. Poso	Da-Me Oil Co., Well	3	27, 26-28		Location
	K. F. Gill Young	1	30, 27-28		Rig
Paloma	Paloma Operator's Comm., No.	54-33	33, 31-26		Rigging up
	Western Gulf O. Co., L.A. Club	36-1	1, 32-26	11349	Testing
Poso Creek	Grandell Oil Co., Claflin	5	10, 27-27		Rigging up
	Golden Bear Oil Co., Agey	4	28, 27-27		Grade
	Pac. West'n O. Corp., Enas Fee	27	21, 27-27	2095	Completing
Round Mt.	Bandini Pet. Corp., Signal-Mills	1	24, 28-28	155	Drilling
	Harp & Brown, Olcese	1	17, 28-29	1957	Abandoned
	Iseminger Bros., Recovery	1	2, 28-28		Location
	Trico Oil & Gas, Workman	1	5, 28-29		Building rig
Shale Point	Shell Oil Co., Inc., Utting	45-7	7, 27-19	665	Drilling
Strand—East	T.W.A. Oil Co., KCL	54-8	8, 30-26		Rigging up
Tehachapi	E. G. Cummings, Poor Boy	1	31, 32-32	1207	Drilling
Temblor	B. F. Delanty, Well	69-A-1	36, 29-20		Prep. to spud
	Kings County				
Pyramid Hills	Pac. O. & G. Dev. Corp., CC&MO	1	17, 24-18		Rigging up
	Pac. O. & G. Dev. Corp., CC&MO	2	20, 24-18	935	Completing
	Pac. O. & G. Dev. Corp., W. Slope	2	20, 24-18	994	Abandoned
	Madera County				
Herminghaus	The Texas Co., Gill	71-21	21, 13-16		Rigging up
Firebaugh	The Texas Co., Moffat	1-7	7, 12-15	1702	Drilling
	Tulare County				
Porterville	T.W.A. Oil Co., Corehole	54-34	34, 21-26	2709	Abandoned
	T.W.A. Oil Co., Corehole	76-21	21, 21-26		Rigging up

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the interval 6237-57 ft. was a mechanical failure. On section 15 of the township Amerada Pet. Corp. is preparing to pour foundation for Calif. Lands No. 65-15 for a test of what is called the Lanare area.

Pyramid Hills Well Finishing

Pacific Oil & Gas Dev. Corp. is rigging pump to complete C. C. & M. O. No. 2 on sec. 20-24s-18e from the interval 775-920 ft. After landing liner the well bailed clean oil at an estimated 45 bbl. daily rate. On the same section the Company abandoned West Slope No. 2 after finding the sand zone spotty and wet to 994 ft. Next project for the operator will be C.C.&M.O. No. 1 which is rigging up on section 17.

McClung "Cat" To Be Re-cored

Superior Oil Co. is rigging up to redrill and test showings in its long abandoned 13,131 ft. KCL No. 12 in the northeast corner of sec. 3-30s-26e. Abandoned in 1939 the well cored oil showings in the Vedder from 11,120 to 11,170 ft. which were unsuccessfully tested, and obtained similar results from sands at 9085-9115 ft.

VERNON-KNOWLTON LINER HANGER

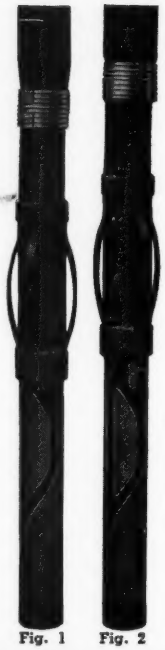

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Fig. 2. shows Full Circle Interlocking Slips and Setting Pin in set position. Slips assure complete contact all around in casing wall. Prevents heave around outside of Hanger.

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Fig. 1 Fig. 2

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